An exploration of the application of three dimensions of learning to young people in the post-compulsory sector.

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Thesis submitted for Doctorate in Education.

Abstract.

The thesis presents the findings from professionally based research. The first aim of the research was to investigate the value that learners in the post-compulsory sector placed on the different dimensions of learning articulated by Illeris (2007). These are the social dimension of learning, the emotional dimension of learning and the content dimension of learning. The second aim of the research was to explore how different participants might give different value to different dimensions of learning.

Three hundred and thirty one participants in four sixth form settings completed a questionnaire. The items for the questionnaire were designed to be interpreted individually and psychometrically. The data was subjected to quantitative analysis. Descriptive statistics indicated that post-compulsory learners do value the dimensions of learning proposed by Illeris (2007). However, a Principal Component Analysis suggested that they were also cognisant of a fourth dimension, that of meta-learning. The findings indicated that young post-compulsory students do not value different dimensions of learning equally or consistently. There is a relationship between the types of learning experiences that young people have and the importance they place on different constituents of learning. Three variables are associated with the different value given to the dimensions of learning. These are the context in which the participants learn, the assessment procedures that their programmes require and prior learning achievements.

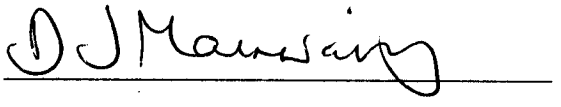
The emergent findings are utilised to explore further the model offered by Illeris (2007). It is expanded to explicitly include the process of meta-learning. It is proposed that as young people engage in the post-compulsory sector, the experiences of learning that they have interact with their self identities as learners. It is suggested that these interactions lead to young people's learning identities developing differently. The implications of this for professionals working with young people in the post-compulsory sector are discussed.

Declaration of Word Count

The exact number of words in this thesis is 46,282. The abstract, table of contents, statement, references and the appendices are excluded from the word count.

Declaration of Own Work

I hereby declare that, except where explicit attribution is made, the work presented in this thesis is entirely my own.

Signed 

Acknowledgements

I wish to thank the participants who gave up their time to help with the research. They were always so generous spirited.

I am indebted to the Principals of the sixth form centres and colleges who allowed me access to the participants. Moreover, I am indebted to the teachers who allowed me into their classrooms. Without their support, I would not have gathered the valuable information presented here.

I have been most fortunate to have Professor Sue Hallam as my supervisor. Her unwavering support and guidance began before I started the Doctorate and has been indispensable to my progress.

Finally, I would like to thank my family, especially Richard, Claire, Grace and my Mum, Elizabeth. All of whom have supported me in their own inimitable ways.

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Statement

Starting the Doctorate in Education (Ed D) programme.

In 2006, I had been employed as a teacher in the same school for twelve years. Although I had been fortunate to have varied roles, I was ready for new challenges. At the same time, I was uncertain that I could put myself forward for typical career advancement without jeopardising my family's stability. In May of that year, Professor Sue Hallam provided me with an alternative. She advised me to do a degree that I had never heard of. I thought about a research proposal and applied for the Ed D in 2007. I am so glad that I did.

My professional context from 2007 to 2012.

My initial research proposal was to assess if and how the implementation of a 'learning how to learn' programme changed the self-concepts of school children. This was possible because at the time I had responsibility within the school for leading such an initiative. I was concerned that the classroom context limited children's ideas of how learning happened. Intuitively, I felt that too many children were adopting narrow learning strategies that were not applicable to learning beyond school. Only parts of this first proposal were realised because whilst I have been studying for the Ed D my professional life has changed considerably. At the beginning of 2009 I became a Lecturer at the Institute of Education (IOE). The assignments that I completed for the four taught courses were situated in my professional life as a secondary school teacher, the context for the institution focused study (IFS) was teacher education at the IOE and the thesis is positioned in the post-compulsory sector.

Nevertheless, regardless of the different contexts, it is 'the science of learning' that has underpinned my studies during the doctorate (Bransford et al., 1999, p. 231). My concerns about how young people see themselves as learners have not dissipated. Rather, they are now supported by the evidence that I put forward and defend in the assignments I have written for the Ed D and the thesis presented here. I will outline

below how I have developed through my engagement with the elements of the programme.

Four taught modules.

The assignments I wrote for the 'Foundations of Professionalism' module and the 'Leadership and Learning in Educational Organisations' module were bound together by their focus on teachers' professional learning for school development. The first assignment discussed how the concept of 'community of practice' (Wenger, 1998) could be used to implement shared practice so as to enhance provision for children with regard to learning and teaching. The second assignment considered different leadership models that could make purposeful all school teachers' contributions to overall school performance. In both assignments, my role as a middle leader for the improvement of teaching and learning was considered analytically and reflexively. Through the completion of these assignments, I developed much understanding of the structures within schools. I learned that these constructs were sustained because they were unchallenged. Structures that would provide opportunities for colleagues to develop their capacity were not systemic. In turn, the teachers' opportunities to enhance effective learning by young people were stymied. I had been enabled to academically critique systems that hitherto I had not questioned.

Through the first Methods of Enquiry module, my epistemological thinking developed rapidly. I became secure in my understanding of evidence and the construction of knowledge in the field of Education. Further, I was introduced to current research methods and invited to explore the strengths of each. Adopting a constructivist position, I was able to use my growing understanding of how knowledge is formed to consider the problematic that I came to the doctorate with. The second Methods of Enquiry module enabled me to explore how a small 'learning how to learn' intervention I had initiated in school might have altered how those involved perceived the process of their learning.

Through the four modules, I developed a full understanding of different aspects of educational theory and I had a breadth and depth of knowledge in education that I found empowering. With a firm foundation, I began the IFS.

The institution focused study.

I have already stated how the academic pursuit of how we learn underpins my studies during the doctorate. In my IFS, I explored the conceptualisations of learning that post-compulsory teacher trainees bring to their Post Graduate Certificate in Education (PGCE) at the IOE and how this might change during the one year programme. I interviewed twenty trainees about their recognition of their own learning and their recognition of when their students were learning. I asked them what skills they thought were pre-requisites for effective learning. It was at this time that I stumbled across the work of Illeris (2007). Illeris (2007) proposes there are three dimensions to learning. These dimensions are the social dimension of learning, the emotional dimension of learning and the content dimension of learning. I used Illeris's (2002) model of the three dimensions of learning as the framework for categorising the participants' conceptualisations of learning. I found that for some participants' their articulation of learning changed considerably during the year. For others, it seemed tacit assumptions about learning remained intact. Having earned a place on a PGCE, it is evident that teacher trainees are successful learners. Yet the findings indicated that their development of knowledge about learning was haphazard. I suggested that if the trainees were explicitly conscious of their own learning, then they would be in a stronger position to engender effective learning by their students in the colleges.

The thesis.

In the thesis, I turned my focus to the young people in the post-compulsory sector. Recently exited from schools, these young adults are preparing for the world of work and higher education. Their development at this time is formative and their progress pivotal to their life choices. As a teacher educator for trainees preparing to work in the post-compulsory sector, I knew that little was documented about how the students in the

sector conceptualised their learning. I was ambitious to provide some evidence that might remedy that in a small way. Hence for the thesis I chose to do a large scale quantitative study that captured the value that students from four different post-compulsory settings placed on the different dimensions of learning as articulated by Illeris (2007). Moreover, much as I am persuaded of the worth of Illeris' (2002) theory of learning, I analysed the data to explore whether the theory matched to the conceptualisations of learning that the young people articulated. The evidence presented indicated the existence of a fourth dimension: meta-learning. Whilst all young people positively valued the dimensions of learning, some categories of young people emphasised the importance of thinking about how they approached their learning more than others.

Even though my initial proposal was never realised, I have not lost sight of what I wanted to investigate. That is, I wanted to know how young people can be helped to learn effectively. In the discussion of the thesis, I proposed that the values for the dimensions of learning that the young people express may interact with the young people's self concepts of themselves as learners. Whereas in 2006 I might have failed to persuade others of the importance of an explicit focus on learning, today I would be formidable to challenge. This is because of the development of my academic thinking and my skills as a researcher. I will outline below how these have changed.

The development of my academic thinking.

Studying for the doctorate, my understanding of the theories of professionalism, theories of leadership and theories of learning has grown rapidly. Each theory has provided a lens with which to critically inform my professional life. I have been able to connect the concepts to the real world. At the same time, no one theory provides adequate explanation for real life events. Comparing different theoretical positions and studying their provenance has enabled me to become considerably more cautious in my acceptance of theory and the justifications used to defend them. I continually question the worth of academic arguments that are put forward. Even my engagement with Illeris (2007) has been critical. When I first read Illeris (2007), I found his model to be

a panacea for understanding the complexity of learning. I enjoyed the clever way that he integrated and enveloped other theoretical positions. Yet, I have now dissected the theory and added my own position. Undertaking my own research has enabled me to assess the quality of the evidence that is presented to the academic community.

The development of my research skills.

In the taught components of the Ed D, there was much discussion about the schism between quantitative and qualitative researchers. I do not want to get entrenched in this divide and with a pragmatic stance I would argue that the method of data collection and analysis must be fit for purpose. Hence, my research projects with small samples used qualitative data and flexible designs. Whilst they provided insight into the complexity of the conceptualisation of learning, I would not claim they have generalisability. On the other hand, in the thesis, I did want to investigate possible patterns in groups of learners' thinking. Therefore the thesis has a large sample and uses quantitative analysis. As a developing academic researcher, I now feel confident in my skills. For instance, I understand the difference between a likert scale questionnaire and a semi-structured interview and I can design both. I know the difference between an a priori thematic analysis and a principal component analysis and I can use both. I can choose the appropriate methodology and analysis for research questions posed. I would not hesitate to defend my choice. In turn, I expect to see other researchers defend the choices that they make.

The Ed D and my professional future.

To reiterate what I said in the second paragraph of this statement, I am now employed at the IOE as a Lecturer. My professional role is currently a blend of teaching and education research. I teach teachers from the Lifelong Learning Sector who wish to gain an undergraduate degree and I tutor trainee teachers through their PGCE. Most recently I have taught trainee teachers from Shanghai. It is a privilege to teach such a wide range of people who want to help others learn. I would like to think that my understanding of the psychological complexity of learning in educational organisations

is at doctoral level so that those I teach feel assured that I am competent. Just yesterday I visited Birmingham to capture data for a charity who wish to assess their educational provision and have commissioned the IOE to do this. I collected questionnaires, interviewed participants and light heartedly justified to the regional director that I could do what I was doing because I had just completed my Doctorate in Education.

It has indeed been a transformative learning experience.

March 25th 2012.

Chapter 1. Introduction and rationale, context, practice and theory.

In 1986, I trained to be a History teacher. Very soon, I was curious to understand why some of my students seemed to find learning in the classroom much easier than others, even when they received the same teaching. Whilst some students presented as indifferent or resistant, others came to lessons eager to take the knowledge they were offered. It would have been expedient for me to interpret inappropriate learning behaviours as being caused by limited ability (MacLeod, 1987; Lucas and Claxton, 2010). However, I found the ability paradigm unsatisfactory because many of the young people I taught appeared quick witted and competent. It just seemed that the value they exhibited for learning did not match with what was expected in the formal learning environment. For these students, school had to be endured. My inquisitiveness was not satisfied. Rather, my desire to understand the process of learning increased.

Today, my working life remains in teaching and learning. During my professional journey, to help me comprehend what I have experienced, I turned to the academic pursuit of the psychology of education. The explanations it has provided have undoubtedly become more convincing in recent years. The science and stories of how we learn are 'far richer than ever before' (Bransford et al., 1999, p. 1). The research presented in this dissertation builds on this burgeoning evidence. It focuses on young adult learners and is positioned in the post-compulsory sector in England. This is the sector within which I am currently professionally engaged. It is a sector where learning theory has been under explored and research has been characterised by an institutional or policy focus (Hillier and Jameson, 2003; Biesta et al., 2008). It is my stance that this paucity of research should be remedied because the sector serves young people during a time of identity formation (Bloomer and Hodkinson, 2000). The sector also exemplifies the stratification of learning pathways in England (Pring et al., 2009). This dissertation is an exploration of the application of a theory of learning that may assist me and other practitioners in our understanding of why and how young people in the post-compulsory sector approach their learning in the ways that they do.

1.1. Rationale.

The dissertation presents the findings from a piece of professionally based research, the purpose of which was twofold. Firstly, the research explores the theoretical model of the three dimensions of learning propounded by Illeris (2007). These dimensions are the social dimension of learning, the emotional dimension of learning and the content dimension of learning. Illeris (2007) has suggested that a comprehensive theory of learning must include all of these dimensions, none of which should be considered in isolation. The theoretical model is critically considered. The model is tentatively applied to young post-compulsory learners and is expanded to explicitly include the process of meta-learning. The second purpose of the research was to explore the value that young people in sixth form settings in England place on different aspects of learning and the ways in which these may differ. The research instruments were designed to provide a lens through which the learning dispositions and the learning identities of young people in the post-compulsory sector could be explored closely so as to enhance the understanding of the professionals who work with them.

The argument presented within this thesis is that whilst young post-compulsory students recognise that learning has a variety of dimensions, they do not value these equally or consistently. Further, there is a relationship between the types of learning experiences that young people have and the importance they place on the different constituents of learning. Identifiable variables are associated with different groups of learners. These identifiable variables are the context in which the students learn, the assessment procedures that their programmes require and their prior learning achievements. The emergent findings suggest that young post-compulsory learners value different dimensions of learning according to the experiences of learning that they have currently and have had in the past. It is proposed that these experiences may interact with the self identities that young people have of themselves as learners. The new knowledge presented contributes to the theoretical discourse of learning theory by considering the applicability of the model of the three dimensions of learning. I propose that the three dimensions of learning might be enveloped by the concept of meta-learning. The findings also have practical implications that should be promulgated to those involved

with the education and training of young people so as to enrich the understanding of learners and learning in the post-compulsory sector and enhance the provision offered.

1.2. Outline.

In this introductory chapter, the context for the research will be outlined. This will provide the empirical field and the empirical framework. In the literature review, the theoretical field of the concept of learning and the concept of meta-learning will be discussed. The application of theory to practice will be reviewed. The context and the literature review will establish the problematic which will be presented at the beginning of Chapter 2. From there the reasoning for the research questions will be outlined and the methodology will be explained and justified. The sample, the procedure and the analysis will be described and substantiated. Adherence to ethical standards will be demonstrated. In Chapter 3, the initial findings will be presented. Chapter 4 will outline the implementation of a principal component analysis (PCA) with which to verify the instruments constructed and provide a tool to consider specified dimensions of learning. Chapters 5 and 6 will use the PCA to investigate differences between groups of participants towards different components of learning. In Chapter 7, the research questions will be addressed and the findings will be discussed. The limitations of the research will be considered but the emphasis will be on the value of the new insights and knowledge gained. The implications of the findings for practitioners engaged in the education and training of young people will be outlined and recommendations presented.

1.3. Context.

I am a teacher educator at the Institute of Education, University of London. Each academic year I am the personal tutor for ten trainees, all of whom are training to be teachers in the post-compulsory sector. The sector is sometimes referred to as the Lifelong Learning Sector. It is diverse and disparate. It includes further education colleges, sixth form colleges and adult community learning. It provides training and education for academic pathways and vocational employment and offers a plethora of

different qualification programmes on which young people and adults can enrol (Huddleston and Unwin, 2002).

Reflecting the varied nature of the sector, the Post Graduate Certificate in Education (PGCE) on which I tutor is generic. In 2010-2011, eight of my trainees were placed in sixth form colleges. They trained to teach a range of subjects including Travel and Tourism, Art, Business Studies and Science to young people aged sixteen to nineteen. Similarly, this academic year (2011-2012), six of my trainees are teaching young adults. The programmes they are learning to teach include General Certificates of Education at Advanced Subsidiary (AS) Level and Advanced (A) Level and Business and Technology Education Council (BTEC) Diplomas, Level One, Level Two and Level Three. To assist the teacher trainees in their development, I observe them four times during the academic year. After each lesson observation, there is an opportunity for feedback and reflection. Frequently, trainees are concerned by the lack of engagement on the part of some of the learners. They report that learners sometimes appear unaware of what is required of them, sometimes they seem to be resistant to learning. At the beginning of their teaching experiences, the trainees express bemusement about how to get the students to learn what they have been asked to teach. Mirroring my early experiences from many years before, they find that their learners do not approach their learning in expected ways. Many of my trainees had assumed that as the post-compulsory learners had finished school, they had made positive choices with regard to their learning pathways (Wallace, 2007). They expected the students to be eager to learn. Their incipient experiences in the colleges do not reflect this. Initial teaching encounters challenge the assumptions the trainees have and as the PGCE course progresses, there is a realisation that in order to motivate their students to learn what they want them to, they as teachers need to draw on much more than the secure content knowledge that they once thought would be sufficient. In short, there is a revelation that learning is complex and teaching young adults is demanding.

It can be argued that the complexity and challenge of teaching young people is generated in three ways. Firstly, there is the socio-economic context within which the learners are positioned. Secondly, the teaching processes being utilised traditionally are

not sufficient or appropriate to meet the learning needs of the students in the post-compulsory sector. This may in part be because the learning theories that are drawn upon and expounded by teacher educators might not be adequate. Thirdly, adolescence has been seen as a time where identity formation pre-occupies young people, eclipsing other learning experiences that a teacher in a formal situation may have to offer (Erikson, 1968; Illeris, 2007). It is appropriate to consider the first of these now as it provides the empirical field within which this research is positioned. The second and third reasons provide the theoretical field and will be expanded upon in the later sections of the chapter.

1.4. The social, political and economic context for young post-compulsory learners.

The immediate post-compulsory years are considered critical for the development of young people so that they are enabled to take their place in society (Pring et al., 2009). Socio-economically and systematically these years are seen as transitional, intended to prepare young people for the world of work and undergraduate study. However, there are regular policy changes that are indicative of constant government concern that education during these years is not organised satisfactorily. The provision offered has been subject to much scrutiny over many decades (Haffenden, 1987; Chitty, 1991; Leitch, 2006; Coffield et al., 2007; DCSF, 2008; Hodgson and Spours, 2008; Pring et al., 2009; Wellings et al., 2010). The Wolf Report (Wolf, 2011) on vocational education is the most recent example of several reviews, the recommendations of which have been accepted by the current government (DfE, 2011). Presently, there is political consensus to guarantee educational opportunities for all after compulsory schooling is completed (DfE, 2011a) and to raise the participation age to 18 by 2015 (DfE, 2011b). It is argued that this will reduce the number of young people who are not in education, employment or training (NEET) and increase the United Kingdom's capacity for global economic competitiveness (DfES, 2007).

Although this appears straightforward, the pathway available to any sixteen year old is limited firstly by prior achievement and secondly by what is offered by post-compulsory education providers. To elaborate on the first point, young people have already

experienced eleven years of compulsory schooling. Mandatory education is measured summatively through attainment on General Certificates of Secondary Education (GCSEs) during the final year (Year 11). GCSE performance steers the opportunities available to young people. Those who achieve five GCSEs with grade C or above are thought to have achieved Level Two qualifications and can move forward to take Level Three qualifications (Directgov, 2011). The most common Level Three qualification is the A Level (DfE, 2011c). This consists of the Advanced Subsidiary (AS) programme, a qualification that can be awarded singularly or combined with a second year of study (A2) for the complete A Level. Students take a combination of at least two Advanced Levels, thereby pursuing different subjects. A Level is assessed by examination. Another Level Three qualification is the BTEC National Diploma. Regarded as a vocational qualification, this is a two year programme and can be taken in subjects such as Health and Social Care, Performing Arts and Hospitality and Catering. Those who choose a BTEC will follow a range of topics from within their vocational area (Edexcel, 2010). BTECs are assessed through coursework.

In England in 2010, 24.6% of young people did not achieve five GCSEs with a minimum of grade C (DfE, 2011d). These school leavers were not eligible to go on to Level Three qualifications. The opportunities for them are less apparent. They are expected to follow a Level One programme such as the BTEC Introductory Diploma or Level Two programmes such as GCSEs or the BTEC First Diploma.

This leads to the second limitation; provision of and choices relating to these pathways is not consistent across providers. Some colleges do offer Level One and Level Two programmes (SFC, 2012; SFD, 2012). Yet sixth form centres attached to schools may focus specifically on A levels (Camden School for Girls, 2012) and some colleges emphasise that their offer is primarily Level Three (Woodhouse College, 2012). Hence, there is 'considerable selection and sorting of learners occurring at 16' (Pring et al., 2009, p. 55). The variety of institutional arrangements conspires with geographical accessibility to make 'serving the needs of all learners in a locality difficult' (The Nuffield Review, 2009, p. 7).

A further contextual factor needs to be considered. Although some school leavers might want to be in work, the youth labour market has collapsed (Wolf, 2011). Presently in England there are 1,116,000 16 to 24 year olds who are recorded as educationally or economically inactive, 267,000 of these are 16 to 18 years old (DfE, 2011e). Many 16 and 17 year olds are moving in and out of education and short term employment. Wolf (2011) states:

> 'they are churning between the two in an attempt to find either a course which offers a real chance for progress or a permanent job, and finding neither' (p. 7).

There is value in young people being encouraged to become better equipped to partake in society by staying in education but to maximise the benefit, the provision must be coherent and purposeful (Pring et al., 2009; Wolf, 2011). Re-occurring re-organisation is indicative of the fact that the tensions between unequal access and adequate education and training remain unresolved (Tomlinson, 2004; Coffield, 2007). It reflects the unsatisfactory structures within the education system. These structures will be considered in Section 1.4.1.

1.4.1. Structures in the education system.

In this section, I will adopt the position of Ball (2008) who uses the lens of social class to consider unequal access in education. It is through this lens that education can be seen as an agent of power, social division and social control. I will begin the discussion with reference to the history of the establishment of compulsory schooling for children in England.

In Britain, there has been 'a natural reluctance to disturb the alliance of schools with particular social groups' (Benn and Chitty, 1996, p. 4). Those with power were not invested in sharing resources. When universal free education was established in the 1944 Education Act, so was a tripartite system of schooling (Barber, 1996). Grammar schools were for the most academically able, technical schools were for preparation for industry and secondary modern schools would enable the remaining pupils to be ready

for their working lives (The Norwood Report, 1943; Barber 1996). The different types of schools reinforced class division and gave different young people different ideas about their position in a hierarchical society (Barber, 1996; Benn and Chitty, 1996; Ball, 2008). The grammar schools were 'filled with white middle class children and the secondary modern schools with their working class contemporaries' (Barber, 1996, p. 41). Grammar school children were encouraged to go to university. This led to well paid jobs and positions of influence. Secondary modern children were prepared for work. The education system in England in the twentieth century concomitantly was divided by class whilst it reinforced class divide. Even though there have been several government reports that recognised that the divided system led to the underachievement of many young people, the 'continuing political commitment to social division' has not been eradicated (Ball, 2008, p. 67). The legacy manifests itself through the notion of parental choice (Benn and Chitty, 1996; Ball, 2008). This favours the middle class (Ball, 2008). The Organisation for Economic Co-operation and Development has emphasised that schools in the United Kingdom have high levels of social segregation (OECD, 2012).

The schools that young people attend during their compulsory education influence the choices that they make after they have finished their compulsory schooling (Hodgson and Spours, 2008). If the school has a middle class intake then it will encourage young people to stay in the sixth form to pursue A level courses (Hodgson and Spours, 2008; Pring et al., 2009). At the same time, those who do not achieve the appropriate GCSE grades will be encouraged on to vocational programmes. In this way, sixth form colleges, sixth forms attached to schools and Further Education colleges compound and reflect pervasive social structures. The sorting of learners at age 16 that Pring et al., (2009) describe can be seen to be underpinned by class divisions.

There is consensus amongst many educationalists that these divisions are detrimental to social cohesion (Barber, 1996, Benn and Chitty, 1996). Concurrently, it has been suggested that politicians have accepted this and instead they have prioritised the importance of education for young people as preparation for a competitive global economic market (Barber, 1996; Benn and Chitty, 1996; Ball, 2008; Claxton, 2008).

This economic priority also shapes the context in which young people learn and will be considered in Section 1.4.2.

1.4.2. Education as a global economic imperative.

Globalisation in the twenty first century has produced a particular way of thinking about education (Ball, 2008). The current education secretary exemplifies this position, recently stating that young people are 'more poorly equipped to compete internationally, for college places and for jobs, because they lack the skills and knowledge expected of contemporaries in other nations' (DfE, 2012a). Combatively, Claxton (2008) suggests that whilst government might be satisfied that the purpose of education is to contribute to the national economy, 'the idea that young people go to school to be shaped into serviceable cogs in a giant economic machine really doesn't do it for young people' (p. 33). He goes on to report that a positive correlation between investment in education and economic prosperity cannot be assumed as 'measures of national economic success go up and down, and so do countries positions in educational league tables' (Claxton, 2008, p. 33).

Nevertheless, with the thoughts of national economic need uppermost in their minds, successive politicians have repeatedly encouraged the development of qualifications for sixteen to nineteen year olds that were intended to improve their skills and employability (Coffield, 2007). The involvement of employers in the development of qualifications has been seen as beneficial (Coffield, 2007). The BTEC qualification described in Section 1.4 was developed with employers to prepare young people for industry (Hodgson and Spours, 2008). Evidently, these interventions have not alleviated the concern of government that young people are ill prepared for the global economic context (DfE, 2012a). The discourse with regard to examination reform rumbles on. At the same time, the Advanced Level qualifications, steeped in tradition, are thought of as unquestionably appropriate for the preparation of young people for university (Pring et al., 2009). They are 'politically totemic' (Hodgson and Spours, 2008, p. 8). Therefore, there is continual tension between preservation and innovation and new qualifications are measured against the standard of the traditional ones (Hodgson and Spours, 2008; Pring et al., 2009). Even though they might have

employability in mind, young people who choose a vocational qualification at level three have found themselves compared unfavourably with young people who choose to follow A Levels (Hodgson and Spours, 2008). The value given to qualifications within the social context is important in this thesis. When young people are choosing what pathways to take after their GCSEs, they may unwittingly make decisions that disadvantage them in the future.

In summary, it can be seen that successive governments have seen the purpose of education as meeting an economic need. Moreover, the social context that young people find themselves in influences the choices they have and the decisions that they make. Therefore, in England, some young people are buffeted by a fragile and uncertain context and there is a parlous relationship between what they are expected to learn, what they have access to and what they need for the world of work into which they want entrance. Working within a context where these contradictions are manifest, my trainees are learning to teach young people.

Dewey (1916) said 'there is nothing to which education is subordinate save more education. The educational process has no end beyond itself – it is its own end' (p. 60). Despite this seminal statement, I have outlined how the development of the education system in England has been driven by other priorities. Omitted from the discourse is an agreed vision of what 'counts as an educated nineteen year old in this day and age?' (Pring et al., 2009, p. 18). I would suggest that this omission adds to the instability of the economic and social context in which young people find themselves. Fortunately, Pring et al. (2009) provide a vision, suggesting that an educated person has developed intellect to think critically, has practical capability, a sense of community, moral seriousness, self awareness and wishes to pursue excellence. This educated person would be economically autonomous. Despite the unequal educational structure and government priorities that I have described, the Lifelong Learning Sector is well positioned to support young people to become educated (Coffield, 2007). It is time now to consider the remit of the Lifelong Learning Sector.

1.4.3. The Remit of the Lifelong Learning Sector.

Clearly, the socio-political and economic context is important because it is within that that the post-compulsory sector must function. The sector is charged with the responsibility of preparing young people for an adult world in which they can economically thrive and personally develop (Biesta et al., 2008; Billett, 2010). Yet, it is evident from the description above that different colleges fulfil their remit in different ways.

Moreover, it is de rigueur to assert that regardless of how many qualifications a young person accumulates, what matters in a rapidly changing world that has uncertain economic prospects, is the ability of people to respond flexibly and creatively to the demands that will be made of them (Coffield, 2002; Cornford, 2002; James et al., 2007). It has been argued that the possession of 'learning to learn' skills is essential for effective learning (Cornford, 2002). The development of these skills has been consistently overlooked in the post-compulsory sector (Cornford, 2002; Fredriksson and Hoskins, 2007). Instead the sector can be perceived as offering 'an endless series of re-trainings' that does not provide a 'cheerful prospect' (Leamnson, 2002, p. 102). I assert that this is a situation which many practitioners in the sector would like to change. They can see that continuous learning requires individuals who are equipped with the skills that are necessary to self-organise and self-manage their knowledge paths (Carneiro, 2007). However, it is simply that like learners, practitioners are also buffeted by the policy context (Pring et al., 2009; Billett, 2010). They pragmatically choose what they think is best for the learners that they support from the options that are available to them.

Hence, for instance, they offer qualifications that are either assessed by portfolio or by exam and advise young people to choose such pathways depending on what they think will suit them. These differences in assessment requirements are worthy of further consideration. Biggs (1998) has argued that learners' attitudes to learning can be shaped by the assessment strategies of the study programmes that are followed. Whereas BTECs are assessed through assignments and portfolios, A Levels demand

preparation for examinations. If 'designed appropriately', the portfolio nature of the BTEC might be 'very good at setting in motion meta-cognitive and reflective learning processes' (Biggs, 1998, p. 107). Portfolios may encourage learning that is preparatory for the adult world. In contrast, examination programmes are preparatory for further study of the same type (Biggs, 1987). They focus on how well young people can recall content. As this is predominant, the teachers can be led by the test and teach accordingly (Black and Wiliam, 1998). Meaningful learning might not be encouraged when assessment is by examination. It is possible that when young people choose their post-compulsory pathways, they may also be choosing a particular approach to learning. In turn, this may shape the skills for learning that young people develop in preparation for the adult world.

What has been outlined above sets out the empirical field. It sheds light on the external conditions that influence the choices post-compulsory learners make. Alone, it does not provide a sufficient explanation for the complexity and challenge of teaching young adults. Returning to my trainee teachers' realisation that teaching is demanding, they will be advised through the PGCE to consider theories that might help them to understand the experiences they have and to develop their practice. It is appropriate now to consider the theories of learning that can assist them with enhancing student learning. To do this, and to give the thesis parameters, a definition of learning must be proffered.

1.5. A definition of learning.

Watkins et al. (2007) suggest that conceptions of learning differ depending on who is being asked to define the concept. Tautologically, some academics appear to have used learning theory to define the process (James et al., 2007), further indicating that a satisfactory definition is elusive. Yet humans are 'constantly engaged in learning' (Hallam, 2005, p. 1). It can be deliberate or without conscious awareness but it will result in lasting change in an individual. Given the complexity of the concept, it is not surprising that Illeris (2007) chose to define learning broadly stating that it is 'any process that in living organisms leads to permanent capacity change and which is not

solely due to biological maturation or ageing' (p. 3). It is this definition that shall be adopted in this thesis.

As I have indicated, the PGCE on which I tutor introduces seminal theories of learning (IOE, 2011). The trainees are taught 'principles, frameworks and theories which underpin good practice in learning and teaching' (LLUK, 2007, p. 4). This is partly to adhere to the professional standards that were set by Lifelong Learning UK (LLUK) but there is also an ambition that the PGCE programme will challenge the trainees' expectations of teaching and improve understanding of education theory (IOE, 2011). Behaviourism, constructivism and situated learning theories are all considered (IOE, 2011). Reflective practice is embedded in the programme. Section 1.6 will begin with an overview of these theories.

However, a note of caution is warranted; although learning is often associated with formal education, it cannot be guaranteed that school, college or university will engender learning, specifically not the kind of learning that might be desired by teachers from their students (Holt, 1969; Illeris, 2006) or teacher educators from theirs (Tomlinson, 1999; Smith, 2005). Hargreaves et al. (2005) report that teachers in England feel that they have been given little guidance of practical value about the nature of learning, stating:

> 'Whether teachers come to use an explicit, elaborate and expert view of learning depends more on chance than on a planned sequence of initial training' (p. 5).

It is with that stance in mind that I proceed.

1.6. Theories of learning.

Engeström (2009) writes:

> 'standard theories of learning are focused on processes where a subject... acquires some identifiable knowledge or skills in such a way that a corresponding relatively lasting change in the behaviour of the subject may be observed' (p. 58).

Behaviourism and cognitive constructivism are two of these standard theories. They are outlined below.

1.6.1. Behaviourism.

Established in the mid twentieth century, it has been argued that behaviourism is the most pervasive of all theories related to learning (Banyard and Grayson, 1996; Kohn, 1999). It suggests that learning can be encouraged and shaped by positive reinforcement of appropriate actions by students (Skinner, 1971). For Child (1986) the relevance in the classroom is 'obvious' and 'the rewarding of appropriate behaviour is bread and butter to the teacher' (p. 98). Observation of many classroom behaviours makes it easy to agree with this position (Bentham, 2004; Wallace, 2007). Young children are praised when they stay focused on their tasks; older learners are awarded certificates for attainment. Yet, behaviourism is not a theory of learning per se; it is a theory of behaviour. It disregards the internal thoughts and feelings of any individual and has been heavily criticised for ignoring free will (Slater, 2004). It provides only a partial explanation for learning.

1.6.2. Constructivism.

For cognitive constructivists, as children develop, they go through the process of the acquisition of knowledge, in which they may either assimilate or accommodate information (Piaget 1952; Bruner 1960). Children develop cognitive constructions or schemata with which to understand their world (Child, 1986). Assimilation is the fusing of new knowledge with existing schemas so as to expand knowledge and understanding. Accommodation includes altering existing ideas to understand new ones. This latter process might be transcendent (Illeris, 2007), but it is less common than the former

because 'the most important single factor influencing learning is what the learner already knows' (Ausubel, 1968, p. vi). Connections become elaborate and as young people grow, their thinking and learning becomes more complex. Although cognitive constructivism presents a contrast to the behaviourist model, even its own proponents came to see it as too narrow (Bruner, 1996). Vygotsky's (1978) emphasis on the interactive nature of learning provided additional substance. He argued that learners construct their knowledge but with social and cultural guidance.

The social constructivist view has been the progenitor for many other theories of learning. Lave and Wenger (1991) proposed that learning is socially situated and drew on examples of the apprenticeship context to illustrate their position. Here, learning a subject is seen as becoming a member of a certain community. Within that community the members have shared meanings, shared repertoires and shared identities (Wenger, 1998). Building on this and focusing on learning in organisations, Engeström (2009) posits that expansive learning happens when all the participants in a setting are propelled to change their thinking.

As the above indicates, learning theory has evolved. For some, participatory based theories signal a foundational shift from the permanence of knowledge to the fluidity of multifarious contexts (Sfard, 1998). Engeström (2009) states that he is offering a complementary view to standard theories because they typically assume that learning is a vertical process 'aimed at elevating humans upward' (p. 70). This may not be the only criticism with which they are charged. Their partial explanations can be deterministic (Banyard and Hayes, 1994), simplify the person (Jarvis, 2009) and ignore other human dynamics such as motivation or emotion (Dweck, 1999).

Even so, the seminal theories of learning should not be denigrated, contemporary learning theorists acknowledge that it is on these ideas that their own have developed (Lave and Wenger, 1991; Wenger, 1998; Illeris, 2002; Illeris, 2007; Engeström, 2009; Jarvis, 2009).

1.6.3. Reflective practice.

One further model of learning should be considered in this dissertation because it runs through the post-compulsory PGCE. That is the process of reflective practice (Schön, 1983). Through the assignments and tasks that are set, it is expected that the teacher trainees I teach will reflect on their actions and reflect in action so as to develop their teaching practice. 'Reflection on action' occurs when a practitioner thinks back on what they have done to see how their prior knowledge might have led to an unexpected outcome (Schön, 1983, p. 276). 'Reflection in action' happens when the practitioner can still make a difference to the situation and 'thinking serves to reshape what we are doing while we are doing it' (Schön, 1987, p. 26). As they go through the programme, the trainees are asked to critically consider their values and behaviours. Reflective practice takes learning away from an assumption of 'technical rationality' and into the 'swampy lowland' of the real world (Schön, 1987, p. 3). It is an adult learning theory that is widely adopted for professional learning. It provides meaning for the poorly defined melange of experiences that practitioners can have. Anecdotally, I know that the trainees on the PGCE may initially resist reflection, but as they come towards the end of their programme they often concede that the process of reflection has propelled their learning. The most recent OFSTED report for the post-compulsory PGCE programme at the IOE endorsed the process stating that the trainees developed well as reflective practitioners (OFSTED, 2010). For me, reflective practice is a component of meta-cognition. It allows time for thinking about approaches to practice and the thoughts that precede that. It is of note that whilst the participants on the PGCE are overtly encouraged to utilise this learning approach, its application to the post-compulsory learners that the trainees teach is not so clearly asserted. Indeed, I have already argued that 'learning to learn' skills have not been explicitly encouraged in the sector (Cornford, 2002; Fredriksson and Hoskins, 2007). Instead, in the current teacher education programme at the IOE, it is behaviourist and constructivist theories that are considered relevant to the students.

The approaches presented above all offer partial but valuable explanations for how learning occurs in the post-compulsory sector. Recently, Illeris (2007) has presented a

model that connects these fractional explanations and aims to offer a comprehensive theory of learning that can be utilised in the twenty first century. Emphatically stating that his understanding of learning 'has drawn on contributions from many different positions', Illeris (2007, p. 260) moves learning theory towards a more holistic position. He advocates a model that includes three dimensions of learning and aims to present a theory that covers the lifespan. (Illeris, 2009). I find Illeris's position persuasive and I have already declared in the introduction that I have utilised the model in this dissertation. It is time therefore to expand on the three dimensions of learning that he proposes (Illeris, 2007; 2009). I now depart from the overview of theories taught on the PGCE programme because Illeris's (2002) theses are not currently included.

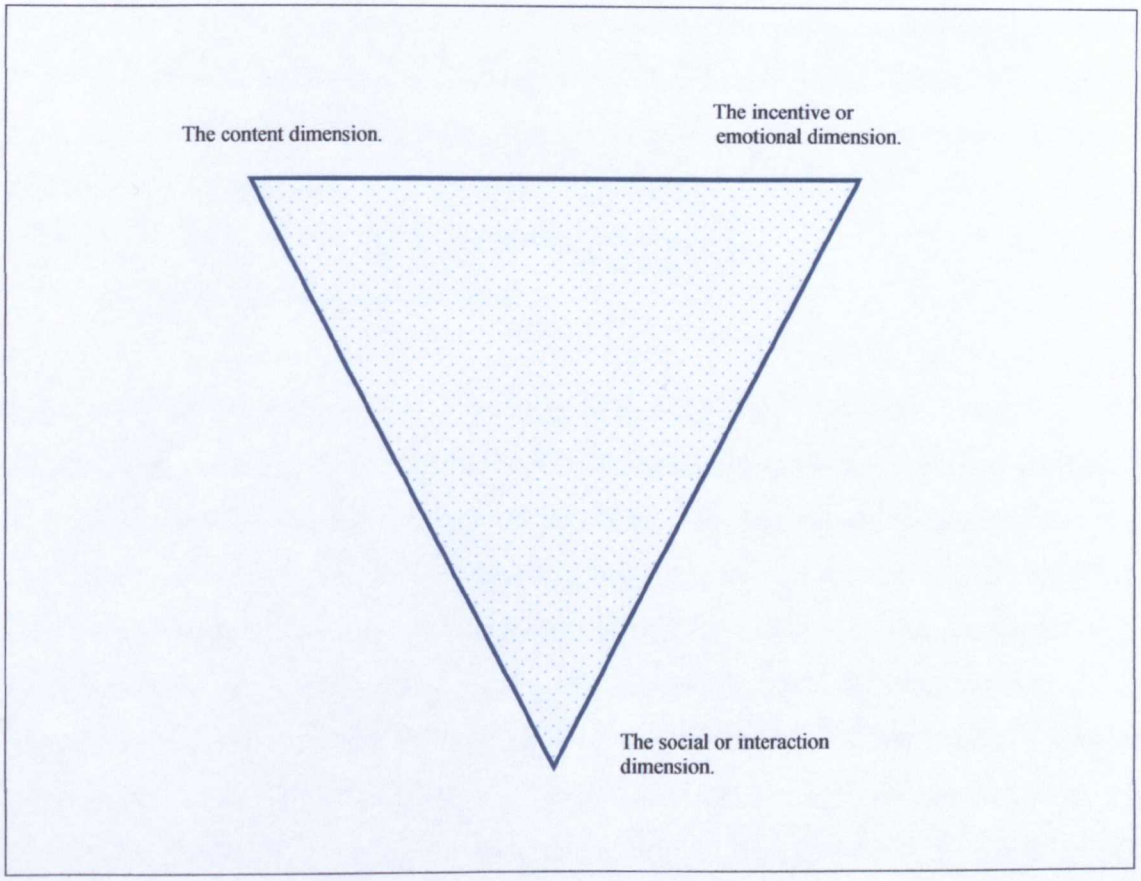
1.7. Towards a comprehensive theory of learning.

Illeris (2009) is emphatic: 'learning is a very complicated matter' (p. 18). In his model there is the content dimension of learning, the social or interaction dimension of learning and the emotional or incentive dimension of learning. Figure 1.1 shows this model. For Illeris (2007) human learning will always include these constituents. Each one will be outlined fully below.

1.7.1. The content dimension of learning.

Learning is meaningless unless there is something to learn (Illeris, 2007). The content dimension is concerned with what is learned. This might be knowledge, insights, opinions or ways of behaving. Illeris (2007) explains the content dimension using Kolb's (1984) learning model which in turn draws upon the work of Piaget (1952). Kolb's (1984) model emphasises the cyclical process of concrete experience, reflective observation, abstract conceptualisation and active experimentation. With no beginning and no end, the model introduces the idea that assimilative knowledge typically develops from comprehension and intention, and accommodative knowledge develops from apprehension and extension. Therefore, meaning can be made from experience, without which the acquisition of knowledge is inadequate.

Figure 1.1. Illeris's (2007) model of three dimensions of learning.



Illeris (2007) recognises that the content dimension also encompasses reflection and meta-learning. The former he endorses easily and acknowledges his indebtedness to Schön (1983). He accepts that learning that is accommodative can be cemented by the psychological energy required through reflection. Illeris (2007) is more cautious about his endorsement of the latter. Firstly, he does not want it confused with the 'modern catchphrase learning to learn', a phrase that he dismisses because it implies that humans have to be trained to learn when learning is an innate skill (Illeris, 2007, p. 67). Secondly, he suggests that meta-learning or meta-cognition is the process that places other learning processes in a collected overall perspective. It is a concept that refers to the capacity to acquire something new by understanding the 'fundamental conditions for ordinary assimilative learning and partly also accommodative learning' (Illeris, 2007, p. 68). Hence dynamically, it is similar to the accommodative process of which it is part because it comes about through learning that creates challenge. The significance that Illeris (2007) gives to meta-learning indicates he sees it in the same way as

accommodative learning. At the same time, by arguing that humans are driven to learn, Illeris (2007) underestimates the value of learners being guided towards cognisance for their own effective processes for learning in the classroom context. Indeed, his fleeting discussion of meta-learning is in contrast to much of the contemporary literature about learning. This proposition will be returned to in Section 1.8.

1.7.2. The social dimension of learning.

Explaining the social dimension of learning, Illeris (2007) builds on the situated learning theory of Lave and Wenger (1991). However, he separates the 'situatedness' into two aspects (Illeris, 2007, p. 97). Firstly there is the immediate situation of the learning place such as school or college. Secondly there is the general societal situation that has pervasive cultures and values (Illeris, 2007). In this thesis, because the focus is young people from just one country's educational system, it is the former that are highlighted. The interactions that happen in a learning situation are extensive. Learners participate in groups of differing sizes. They discuss ideas in their classes and they share tasks. As they do so, perception, transmission, imitation and activity are involved and the learners learn because of their shared dialogue, shared meanings and shared identity (Wenger, 1998; Illeris, 2007). The shape of interaction will depend on the priorities of those who provide the formal learning situations. Although there are advocates for deliberate learning in groups (Jaques and Salmon, 2007), in highly accountable systems interactions might be limited by performance measures (Watkins et al., 2007). Even so, real life opportunity does not negate the pivotal place that the interaction dimension has in the field of learning (Illeris, 2002).

1.7.3. The emotional dimension of learning.

The third dimension in Illeris's (2002) model is the emotional or incentive dimension of learning. Again he utilises seminal theory to support his views, this time the psycho-dynamic position of Freud (1962). What he takes from Freud is the recognition of drive. Human learning is based on the motivation for life fulfilment (Illeris, 2007). Much of this motivation may be unconscious. However, conscious decisions are also

made in the incentive dimension because if a learner has knowledge that it is worthwhile for them to learn more, then motivation toward that learning will be evident. Moreover, the way a person feels about what they have to learn, the emotions that they bring to it will influence how they approach that learning (Goleman, 1996). For successful learning to occur, learning challenges need to be in harmony with the learner's interests.

It is emphasised by Illeris (2007) that the three dimensions of learning are not to be thought of as separate; they are holistic, inter-dependent and inter-related. Learning experiences are dynamic and fluid, and each dimension is included. Hence Illeris (2007) writes determinedly:

> 'It is my basic assumption that these dimensions are always represented in learning processes and that a comprehensive learning theory consequently must include all three dimensions' (p. 256).

To reiterate, I find this position persuasive, it moves conceptualisations of learning away from the predominantly cognitive view of the twentieth century, it highlights the interactions in the situation and it incorporates free will and emotion. The breadth is to be commended. However, there are two reasons why the breadth might also be misleading. Firstly, Illeris (2006) ignores the pervasive social structures I considered in Section 1.4.1. and secondly, he undervalues learners' perceived ideas of learning. His theoretical position might not be of immediate help to my trainee teachers. I will elaborate on these limitations further below.

1.7.4. Constraints to learning caused by social structures.

In Section 1.3, I described how my trainees are surprised that their learners do not want to learn. Illeris's (2006) explanation for this is that the learners have created barriers to learning that are rooted in the three dimensions. Content that has been learned incorrectly prevents the opportunity to learn new content, the situation might be resisted and the incentive and emotional fortitude to learn might be missing. The explanation

that Illeris (2006) provides is predominantly psychological. In Section 1.4, I outlined the social, political and economic context within which young people make their choices. I described the pervasive social structures within education in Section 1.4.1. Illeris (2006) underplays this social context. It was demonstrated in that section that the choices that some young people make are constrained by factors over which they have little control. Social reproduction theorists would propose that this constraint of choice is deliberate (Bernstein, 1971; Bourdieu, 1974; MacLeod, 1987; Lingard, 2010). It is in the interest of those with power to maintain the existing social order and organise the education system accordingly. Therefore the constraint of choice is created because of the principle of social control within a society and the unequal distribution of power (Bernstein, 1971). Endorsing this position, Bourdieu and Wacquant (1992) suggest that the uneven distribution of economic, social and cultural capital within a society can explain the structure and difference within it.

In England and Wales, the Department for Education uses eligibility for free school meals as a measure of deprivation (DfE, 2012). It is also a measure of economic capital. In 2010, 58% of pupils known to be eligible to receive free school meals achieved five GCSEs with a minimum of grade C. This can be compared with 78% of those pupils who were not eligible for free school meals (DfE, 2011d). These statistics demonstrate that a disproportionate group of young people who were eligible to receive free school meals did not achieve five GCSEs at the expected level (DfE, 2011d). The Department for Education recognises that poverty is a notable factor for predicting a young person's life chances (DfE, 2012). The statistics presented here indicate that this factor is not currently assuaged by the schooling young people experience. On the contrary, to cement advantage for the dominant classes, the education system gives value to the young people with the cultural capital to access and enjoy the schooling that they experience (Bourdieu, 1974; MacLeod, 1987). It is important to remember how those who do not achieve five GCSEs with a minimum of Grade C are not eligible to go on to Level Three qualifications. Those who do achieve this benchmark are offered more choices with regard to the pathways they might take. At the same time, they are less likely to come from deprived backgrounds. Taking a social reproduction perspective, it can be argued that the young people who had achieved the required attainments in

England in 2010 had the appropriate economic, social and cultural capital. The statistics indicate that the schools reinforced economic and social inequalities. They had served as the structure 'where socially valued cultural capital is parleyed into superior academic performance' (MacLeod, 1987, p. 12). From this sociological perspective, Illeris's (2006) explanation of why young people fail to learn what is expected of them seems far from convincing.

1.7.5. Undervaluing learners' ideas of learning.

I will now consider the second reason Illeris's (2006) explanation might be misleading. Hacker et al. (2009) propose that students have prior experiences and achievements that shape their expectations for learning. The students are 'unduly influenced by fallible heuristics' and the conceptualisations of learning that are held by learners may harness their progress (Hacker et al., 2009, p. 3). It can be suggested that Illeris (2006) undervalues how much learners' may have been influenced by earlier learning experiences. The trainees I tutor are obliged to help young people to learn. Indeed, they want to, but their students need convincing that learning in the classroom is worth their while. Illeris (2007) acknowledges that young people are indirectly compelled to continue their learning after compulsory schooling. He is scathing of education structures that do not meet young people's needs, but it is within these formal structures that teachers must work. If students are to learn effectively in this environment, the argument that they give consideration and thought to how to approach tasks and adopt appropriate learning strategies for learning seems persuasive (Cornford, 2002; Claxton, 2004; Fredriksson and Hoskins, 2007). Yet, I have already outlined in Section 1.7.1. that Illeris (2007) is somewhat dismissive of 'learning to learn' as a concept. However, contrary to his position, late twentieth century research has shown that if the formal learning processes in which we all engage are to be worthwhile, then comprehension of the complexity of those learning processes is required (Bransford et al., 1999). There is a need 'not to assume the automatic development of learning skills but to teach them quite explicitly' (Cornford, 2002, p. 361). Hence the next section will begin with the definition of meta-learning that is used in this thesis. This shall be discussed within the

context of the three dimensions of learning. Then the application of meta-learning in the formal setting will be considered.

1.8. Meta-learning.

1.8.1. A definition of meta-learning.

There is some consensus in the research that successful students take charge of their own learning (Selmes, 1986; Watkins et al., 2007; Hacker et al., 2009). They are able to monitor and evaluate their learning (Hargreaves et al., 2005). They apply appropriate strategies to meet new learning challenges and to achieve their desired outcomes (Biggs, 1987). Different theorists and practitioners provide different nomenclatures for this process. Sometimes referred to as 'learning to learn', it is often described as meta-cognition (Hacker et al., 2009). For some meta-cognition is limited to thinking about thinking (Watkins et al., 2007). Watkins (2001) suggests meta-learning is 'making sense of one's experience of learning' (p. 1). For Biggs (1987) the student's meta-learning capability mediates the relationships between 'personality factors, the situational context, approaches to learning and quality of outcome' (p. 2). Unlike Illeris's (2007) definition of meta-learning, these descriptions have incremental and practical application in everyday learning. The European Council of the European Parliament talks of 'learning to learn'. The definition established by that organisation is so encompassing that it will be adopted in this thesis. Therefore meta-learning is:

> 'the ability to pursue and persist in learning, to organize one's own learning, including through effective management of time and information, both individually and in groups. This competence includes awareness of one's learning process and needs, identifying available opportunities, and the ability to overcome obstacles in order to learn successfully. This competence means gaining, processing and assimilating new knowledge and skill as well as seeking and making use of guidance. Learning to learn engages learners to build on prior learning and life experiences in order to use and apply knowledge and skills in a variety of contexts: at home, at

work, in education and training. Motivation and confidence are crucial to an individual's competence' (Education Council, 2006, paragraph 5, annex).

1.8.2. Meta-learning combined with three dimensions of learning.

For me, it is curious that Illeris (2007) underplays meta-learning as it is described by the European Council (2006). It could be argued that the definition provided encompasses the three dimensions. The cognitive dimension is represented by the statement 'gaining, processing and assimilating new knowledge and skill' as well as being aware of 'one's learning process and needs'. The social dimension is represented by being able to persist in learning 'in groups' and 'making use of guidance' and the incentive dimension is clear in the statement 'motivation and confidence are crucial to an individual's competence' as well as in the 'ability to overcome obstacles in order to learn successfully'.

Moreover, within each dimension that Illeris (2002) suggests, there are theorists who emphasise the importance of the concept of meta-learning in the domain of their interest. Hence working in the content dimension, Sternberg (2002) argues that students need to be helped to find out what they can learn easily and find ways around what they do not do so well. With regard to the incentive dimension, Deci and Ryan (1994) state that learners will regulate their learning behaviours to pursue specific intentions. In the social dimension, Jaques and Salmon (2007) advocate that learning in groups can be crucial to the development of meta-learning. Similarly, Brown (1997) argues that meta-cognition programmes are collaborative. Perhaps Illeris (2007) resists the term meta-learning because he views learning as fundamentally libidinous whereas the notion of meta-learning makes learning explicit, to be consciously considered regularly. I assert that the concept as defined in this thesis is useful because it offers the potential to enhance learning in formal educational settings.

After all, many commentators suggest that institutions focus erroneously on performance criteria that do not encourage learning (Watkins, 2001; Claxton, 2004; McGuinness, 2005; Coffield, 2007). Offering an optimistic way of looking at learning

processes, the adoption of meta-learning counteracts that prevailing culture. Therefore it has been enthusiastically embraced in some schools. It is appropriate now to consider some of the applications.

1.8.3. Meta-learning in schools.

Seminal studies have shown that introducing activities that allowed learners to become familiar with their own learning in classroom environments reaped rewards as the learners developed responsibility and agency (Selmes, 1987; Brown, 1997). The students became active participants in their learning, reflecting and collaborating when needed (Brown, 1997). More recent interventions have included the notion of learning competencies (Royal Society for the Arts, 2011), or learning dispositions and learning power (Claxton, 2002; Gornall et al., 2005; Deakin-Crick et al., 2007). The cognitive acceleration for science education (CASE) programme presented empirical findings showing that it enhanced the transfer of thinking skills and improved achievement (Shayer, 1999). For Watkins et al. (2007) meta-learning involves noticing learning, talking about learning, reflecting on learning and making learning the object of learning. Reviewing evidence from around the world, Watkins (2005) concluded that explicit discourse about learning promotes a feeling of belonging within a learning community and positive engagement with knowledge. Claxton (2006) agrees but says that beyond the rhetoric, current practices are 'frankly disappointing' (p. 2). School procedures are glued to improving examination performance. Citing action research reports in which he has been involved, Claxton (2006) says there is the potential to go further, to expand the capacity to learn. Learners can be taught to be resilient, to persevere and manage distraction, they can learn to be resourceful, to question and make links (Claxton, 2007).

1.8.4. Meta-learning in higher education.

Higher educational institutions have been criticised for inducing student dependency through the teaching methods and assessment procedures that have traditionally been used (McCarthy and Anderson, 2000). Classic teaching approaches may imbue passivity in the learners. Indeed, the term 'lecturer' suggests that there is only one

teaching method, that of talking. Ergo, there is only one learning method, that of listening (Frazer, 1992). Even so, students bring to their tertiary education unique expectations of what the outcome of their investment in learning should be (Entwistle, 2005). Some might want to gain a qualification and demonstrate excellence; others might want to actualise their interests. The strategies for learning that the students employ will depend on their expectations (Biggs, 1987). Marton and Säljö (2005) demonstrated that students will adopt different learning processes depending on how they have perceived the required outcomes for their learning. Therefore those for whom a qualification is the overall goal might adopt surface learning strategies (Entwistle, 1987). The surface approach might suffice for the passing of exams but it will leave the student floundering because the learning of information could come at the expense of structural quality (Biggs, 1987). Knowledge is accepted in fractured parts and there is an absence of reflection. In contrast a deep approach to learning would encourage understanding because new ideas would be related to previous knowledge and experience, patterns would be sought, and arguments would be looked at cautiously (Entwistle, 2005). The deep approach includes meta-learning. The stances taken by Marton and Säljö (2005), Entwistle (2005) and Biggs (1987) have been influential. Studies have shown that active learning that includes collaboration and problem solving has a notable impact on the development of preparedness for learning, thereby expanding thinking time beyond the classroom and encouraging independent learning (McCarthy and Anderson, 2000; Sivan et al., 2000). Frazer (1992) has suggested that learning in university should include self assessment. Contemporary lecturers are expected to consider their own meta-learning and that of their students so as to enhance learning experiences (Biggs, 2003; Hounsell, 2005). It is proposed that they are best placed to do this because they are experts in the subject area that needs to be learned (Hounsell, 2005).

1.8.5. Meta-learning in the post-compulsory sector.

It was outlined in Section 1.4.1 that in the Lifelong Learning Sector, meta-learning has been proselytised in theoretical discourse because it allows people to respond and adapt to challenges as they learn through the life course. 'Learning to learn' is the

'quintessential tool for lifelong learning' (Fredriksson and Hoskins, 2007, p. 127). Yet, there is a dearth of evidence with which to explore or assess the explicit application of meta-learning in the post-compulsory sector. Research in one English college found that young people appreciate exam focused lessons within a socio-emotionally safe environment and develop appreciation for challenge and independence (McQueen and Webber, 2009). Another study showed that BTEC and AS students are thoughtful and knowledgeable about the constituents for effective groups for learning in classrooms (Russell, 2010). Exploring the study skills of new A level students in a sixth form attached to a school, Selmes (1987) reported that the expectations for studying at that level were a shock for the students. He advocated that the learners needed to be assisted to be strategic. They needed to know whether a surface approach to a task would suffice or if a deep approach would be more fruitful (Selmes, 1987). Although important, collectively these studies do not provide a broad evidence base with which to inform practice. Referring specifically to thinking skills, Moseley et al. (2004) have stated that although many claims are made, there is little known about how the use of such skills might raise the quality of education for post-compulsory learners. In Section 1.4, policy intervention that demonstrated the value of the sector as a transition between school and work was discussed. If the decisions young people make in the immediate post-compulsory years do shape the possibilities available to them throughout life (Bynner and Parsons, 2002; Pring et al., 2009), then the paucity of meta-learning research is untenable. After all, these are also years of identity formation (Erikson, 1968) and the values for learning that young people develop may be carried with them to work and higher education. They are developing their ideas of self towards learning, their learning self schema (Garcia and Pintrich, 1994). That self schema will be a cognitive organisation of self beliefs which has some 'intra-individual consistency over time and situations' (Garcia and Pintrich, 1994, p. 132). It will build on the knowledge that the learners already have about themselves as learners (Illeris, 2007). Claxton (2006) has introduced the term 'epistemic identity' to refer to the emotional and personal attitudes and tolerances that one has to learning (p. 4). It is a valuable term in the investigation presented here. Learners who develop the view that their learning capacity is limited will internalise this in their sense of self, circularly limiting what they believe they can learn. The converse is applicable for those who develop the view that

their learning capacity can be expanded. Claxton (2006) argues that the cultivation of an expansive epistemic identity could potentially give young people the confidence and capability they need for real life complexity. It is appropriate therefore to consider identity formation in young people. This will be included in the final section of Chapter 1.

1.9. Identity, learning and meta-learning.

Within a model for lifespan psychology, Erikson (1968) suggested that the ages of 16 to 19 are part of the adolescence stage in which a young person's learning is focused on identity formation. It is a time for self comprehension. Writing more recently, Pring et al. (2009) say that adolescence is simply a time of confusion. For Illeris, (2003) 'what characterises learning in youth is that it is always connected to and marked by the process of identity development' (p. 357). The consensus demonstrated with regard to the importance of these years to identity formation illustrates their importance. As outlined in Section 1.8.5, of particular concern in this thesis is the idea of self in relationship to learning. However the interaction between identity, learning and the environment is complex and dynamic. It is considered below.

1.9.1. Identity, learning and the social situation.

Perhaps dishearteningly, there is evidence that indicates that a young person's learning identity is well established by the time they leave compulsory schooling (Archer and Yamashita, 2003). This is developed through previous learning experiences in the home and in formal institutions. Therefore, there are some young people who feel that post-compulsory education would not suit them (Archer and Yamashita, 2003). Such evidence can be considered deterministic because it suggests that educational structures reinforce the belief in some young people that further learning experiences would be of no benefit to them. In contrast, Bloomer and Hodkinson (2000) use the term 'learning career' to outline how orientations to the practice of learning can change quite rapidly during the early post-compulsory years. They emphasise that although the learner has some agency, these learning dispositions are inextricably linked with situated

experiences, many of which are unexpected. The dispositions interact with and change learners' sense of identity and the latter can be transformed between the ages of 15 and 19 (Bloomer and Hodkinson, 2000).

It has also been suggested that the culture of the post-compulsory college impacts on the learning approaches and dispositions that young people develop (Hodkinson et al., 2007). Using one sixth form college as an example, Hodkinson and Bloomer (2000) demonstrated that the 'learning careers' of young people can be shaped by the institutions that they find themselves in. In the college, a positive culture for learning, a subtle elitism and a tightly bounded community all combined to create an environment which young people appreciated because it engendered independence and responsibility (Hodkinson and Bloomer, 2000). Moreover, the expectation of going to university was normalised. However, the fragility of this expectation was exposed after some students had left the college and went into work. Therefore the learning identities adopted whilst at the college were not always internalised beyond the time that the learners were members of that institution. Hence the writers cautioned against assuming that research on institutional culture can be integrated with the pursuit of research on approaches to learning (Hodkinson and Bloomer, 2000). On the other hand, recent evidence encompassing many schools suggests that the development of a positive approach to learning can be enhanced by the institution that young people find themselves in, regardless of other prevalent factors (Gorard, 2010). Context does matter.

At the same time, the choices that are available to young people as they develop their identities and think of what they might become can be illusory (Illeris, 2003). It is important to remember the availability of different pathways for different young people and the unemployment statistics (DfE, 2011e). In the rapidly changing world of the twenty first century, society constantly requires its members to be ready to adapt to unknown challenges (Ball et al., 2000; James et al., 2007; Harris, 2008). Therefore, there is tension between the socio-economic requirements of the country and the individual psychological development of a young person. Whilst young people want to focus on their identity, the state requires them to undergo education and training with subject matter that they may consider 'outdated' and of limited relevance (Illeris, 2007,

p. 203). As their place within working society is difficult to predict, it is possible that many of the qualifications offered do not chime with their understanding of self (Illeris, 2007). Feeling obliged to learn what one does not see as purposeful might discourage a positive relationship with learning and lead to a limited epistemic identity.

Here again it can be asserted that meta-learning might be useful. Selmes (1987) writes that post sixteen learners need to be given opportunities and time to think about what they do in the learning place. It has already been noted that learners can be empowered to be strategic and take a self determined approach to what they are learning (Garcia and Pintrich, 1994; Claxton, 2006; Lucas and Claxton, 2010). This may be of benefit to both the individual and their society. Explicit engagement with meta-learning might enable learners to navigate their way through the learning that they need to do for identity formation. Further, the advancement of an expansive epistemic identity may be beneficial to self development as well as being utilised in future work roles. Meta-learning could enable young people to assess the worth of what they are learning, who they are learning with and why they are learning. Put another way, students could develop a comprehensive theory of learning. In doing so, they should actively consider the value of the dimensions of learning.

1.10. Summary of Chapter 1.

Chapter 1 began with an outline of my professional context and the context of my tutees. It was shown that trainee teachers in the post-compulsory sector struggle with getting learners to learn what they want them to learn. The origins of the challenge were partially explained in Section 1.4 when the socio-economic context was explored, and elaborated on further in Section 1.9 when the relationship between identity, learning and environment was considered. The theories of learning taught to the trainees to assist their understanding of classroom learning and the practice of reflection were outlined in Section 1.6. The contemporary theory of learning presented by Illeris (2007) was cautiously endorsed in Section 1.7. In Section 1.8 the notion of meta-learning was compared with the three dimensions theory of learning and the practical application of meta-learning was considered. It was demonstrated that in higher education and

schools, meta-learning interventions have imbued a holistic approach to learning but that research in the post-compulsory sector is minimal. It was argued that a focus on meta-learning may allow for expansive epistemic identities to develop in learners.

The socio-economic policy context, the three dimensions of learning theory and the relationship between identity and meta-learning are the discourses that frame this thesis. The integration of the three domains creates the problematic. Chapter 2 will begin with an outline of the problematic and the research aims will be presented.

Chapter 2. The research aims, theoretical framework, methodology, justifications, sample, procedure, ethics and analysis.

2.1. The aims of the research.

2.1.1. The problematic.

There is concern politically about the preparedness of young people for their economic futures. This is coupled with concern about the readiness of young people to learn through the life course. The learning theories considered on the PGCE on which I tutor provide only partial explanations for the approaches to learning that the learners display. Psychologically, there is little knowledge about post-compulsory learners' epistemic identities (Claxton, 2006). The knowledge about young people's dispositions in relation to learning is limited. Localised interventions in schools have advanced effective learning yet if practitioners like myself want to enhance the teaching and learning experiences offered to the learners in the post-compulsory sector, then I submit that to continue to work with limited information is insufficient; understanding further the conceptualisations of learning that young people have specifically in that sector is important. Indeed, in England in the post-compulsory sector, there is a stark contrast between the unceasing policy intervention and the sparseness of research on effective learning. Contemporary models of learning are not fully utilised. It is the intention of this research to remedy that oversight in some small way.

The aim of the research is to shed light on how a sample of young people in the post-compulsory sector conceptualise their learning and what investment they have for different aspects of learning. Firstly, it is the theoretically based ambition to explore the application of the model of learning that Illeris (2007) suggested is integral to the process of learning to young post-compulsory learners. Secondly, it is hypothesised that a range of variables are associated with different attitudes to learning. These may include the different courses that students pursue, their expectations for the future and their experiences of education to date. The research aims to explore and articulate these variables and to consider difference and relationship. Employing the model of the three

dimensions of learning (Illeris, 2007), the intent is to capture the value that young people in the sector place on the different dimensions of learning. This will offer a lens with which to explore the cognisance that young people have for learning strategies: their meta-learning. In turn, that might illuminate comprehension of how epistemic identities form. I will now outline the research questions.

2.1.2. The research questions.

The main aim of this study was to explore the following two questions:

> **Do young post-compulsory learners in sixth form settings demonstrate cognisance for different dimensions of learning?**
>
> **What value do young post-compulsory learners in sixth form settings express in relation to the three different dimensions of learning as articulated by Illeris (2007)?**

Clearly, the first question is a pre-requisite to the second. This is because the aspects of learning that are valued by young people must be established. The findings to the first question allow for elaboration of the second question and then three subsidiary questions can be posed. These are:

> Are there differences between young people attending different institutions in the post-compulsory sector and the value that they express to the different elements of learning as articulated by Illeris (2007)?
>
> Are there differences between young people enrolled on different qualification pathways and the value that they express to the different elements of learning as articulated by Illeris (2007)?

Are there differences between young people with different prior educational achievements and the value that they express to the different elements of learning as articulated by Illeris (2007)?

2.2. Theoretical framework.

My research explores post-compulsory learners understanding of learning. My research questions are about the different conceptualisations to learning that they might have. Before I explain the design and the process of the research it is necessary to provide a rationale for the methodology I have chosen. There are three discourses that can be drawn on to justify my decision. The first is practical and relates to the purpose of action research. The second is philosophical and relates to the notion of truth. The third emerges from that and is concerned with the use of quantitative data.

2.2.1. Action research.

This research emerged in part from my professional perception that the theories of learning offered to trainee teachers in the post-compulsory sector were not specific to that sector. Moreover, there is no guarantee that new teachers apply the theories that they are taught. They may successfully complete the PGCE programme without specific knowledge about the understanding of learners in their sector. I contest that the trainees' practice would be advanced if this omission was addressed. Therefore, this research is 'real world research' that has problematised the comprehension of learning that is proffered to those working in the post-compulsory sector (Robson, 2002, p. 219). It aims to capture and evaluate the value placed on different elements of learning by post-compulsory learners so as to inform practitioners. The use of Illeris's (2007) theory may elicit some change of practice; if initially only by embedding my own practice more securely in contemporaneous theory. To achieve this, the study draws on the principles of action research (Kemmis, 1999).

2.2.2. The notion of truth.

At the beginning of the twentieth century, science research was thought to offer universal, value free laws (Robson, 2002). It pursued and found the truth. However, by the end of the century there was a burgeoning literature concerned with the limitations of scientific methods and approaches (Latour and Woolgar, 1986; Usher, 1996; Law, 2004). It was argued that rather than scientific findings being objective they were constructed in the beliefs, attitudes and networks of practices of the scientists (Law, 2004). The constructivist perspective has been very influential in the social sciences in addressing this, arguing that reality is interpreted in social action and can only be defined subjectively (Robson, 2002). Educational research has embraced the latter view (Gorard, 2002). Indeed, I would submit that complicit in the task I am engaged in is the assumption that my experiences are guiding my pursuit of truth. In social research reality is 'contingent' (Usher, 1996, p. 28). By design, a professional doctorate places the candidate in their context and this research was contingent upon my position as a teacher educator. The provenance is my perspective of where I practice (the empirical setting and field) integrated with the theoretical literature I have read (Brown and Dowling, 1998). This is the 'appropriate hinterland' from which the research is constructed (Law, 2004, p. 28). At the same time, contingency does not negate reality. Reality is 'unstable and in flux' (Usher, 1996, p. 28). In short: the truth moves.

Therefore recognising the work as constructed does not impede the opportunity to generate research that may offer some generalisations and purpose. I am driven to produce something meaningful that has currency for those engaged in the education of young post-compulsory learners. I would like to generate evidence that can inform practice. To do this I have chosen to use a large sample and quantitative analysis. However, Cohen et al. (2007) report the use of numeric data in educational research has been vehemently attacked. I will justify my choice below.

2.2.3. The use of quantitative data.

Robson (2002) points out that the defendants of the constructivist position in social science argue that quantitative methods are wrong because they cannot capture the real meaning of social behaviour. Gorard (2010a) laments this stating that progress towards enhanced research capacity 'founders on the entrenched schism between work that is purportedly qualitative and that which is termed quantitative' (p. 63). This argument is a distraction from the pursuit of valid evidence. For Cohen et al. (2007) 'quantitative analysis has no greater or lesser importance than qualitative analysis' (p. 501). The approach that the researcher adopts should depend on the research question they are trying to answer (Muijs, 2011). That pragmatic approach is endorsed here. My research is a measurement of the values placed on different aspects of learning. I have already stated how as a teacher educator I have connections with several colleges. I wanted to capture a breadth of experience across sites and I wanted to have confidence in the findings I gathered. The use of quantitative data was the incisive way to do this. It was fit for purpose.

Gorard (2010a) suggests that quantitative research is privileged in review and evidence informed policy making and practice. Nevertheless, 'statistics do not exist 'sui generis'' (Law, 2004, p. 39). They too are constructed. Quantitative meaning is situated; producers of numerical data rely on prior knowledge to understand the meaning of the statistics they create (Gephart, 2006). That doesn't undermine the worth of numerical data as evidence. It simply reminds academe that it must be subject to the same scrutiny as other data forms.

Therefore, whilst I am in favour of the use statistics in this research, I must be continually reflexive about what I bring to the process and how I utilise the data that is generated. I must consider the certainty of the numerical analysis whilst at the same time engaging with it to make reality intelligible (Usher, 1996). After all, the use of numeric data and the writing of this project offer a representation of the real that would otherwise be lost (Usher, 1996). It becomes a 'world of meaning only when meaning makers make sense of it' (Crotty, 1998, p. 10).

2.3. Research design.

A non-experimental quantitative survey research design was adopted for the collection of data in this research. The overriding aim of the research was to investigate the value that young adult learners in the post-compulsory sector placed on the different dimensions of learning articulated by Illeris (2009) and to see how these values and conceptualisations might differ. As has already been stated, although the research was conducted within a constructivist paradigm, I was ambitious that the research project presented evidence that would be useful to education professionals. It was felt that in order to ensure that the research was wide reaching, had rigour, breadth and depth the appropriate approach was through a questionnaire that consisted predominantly of rating scale items. Therefore, the data was collected through the administration of paper questionnaires. The development of the questionnaire is explained in Section 2.5. Firstly, the sample will be described.

2.4. Sample.

The sample for this research was drawn from four educational institutions. They were chosen for three reasons. Firstly their provision was specific to young post-compulsory learners, most of whom were between 16 and 19 years of age. Secondly, although the students were of a similar age and the provision was comparable, I perceived the institutions to have distinct contextual characteristics. Thirdly, through my work as a teacher and teacher educator, I was professionally related to each institution and my presence in each setting was not unusual. To ensure confidentiality, the institutions will be referred to as Sixth Form A (SFA), Sixth Form B (SFB), Sixth Form C (SFC) and Sixth Form D (SFD).

2.4.1. Sixth Form A (SFA).

SFA was a sixth form centre attached to a mixed comprehensive school in the South Midlands of England. It had a cohort of approximately two hundred and twenty students in the sixth form and its offer was predominantly AS levels and A levels. The

sample for the research was drawn from the students who were in Year 12, all of whom were studying for their AS levels. Although one participant did not record his or her gender, thirty six males and thirty two females completed the questionnaire, a total of sixty nine participants. The birthdates of the participants ranged from 02.09.93 to 23.08.94, reflecting the academic year of which they were part. On the questionnaire, students were asked to record the grades they were given for the General Certificates of Secondary Education they had already achieved. Each grade was given a point score (A* = 8, A = 7. B = 6, C = 5, D = 4, E = 3, F = 2 and G = 1). The mean point score for GCSE was 59.64 points with a standard deviation (*SD*) of 15.4. The median was 57 points and multiple modes existed. Table 2.1 shows the self reported ethnicity at SFA. To avoid categorical imposition on the participants it was decided to record all the students own definitions of their ethnicity. It is evident that at SFA, 81% referred to themselves as White British. The remainder chose to refer to themselves with the terms reported in Table 2.1.

Table 2.1. Self Reported ethnicity at SFA

Described ethnicity.	Frequency	Percentage
White British	56	81.2
Black British	1	1.4
White English	1	1.4
British Asian	1	1.4
Chinese	1	1.4
English	1	1.4
White British and American	1	1.4
Caucasian	1	1.4
Turkish	1	1.4
No response	5	7.2
Total	69	100*

*Percentages are rounded to the nearest whole number.

2.4.2. Sixth Form B (SFB).

SFB was a sixth form centre attached to a mixed comprehensive in an outer London borough. It had a cohort of approximately four hundred students in the sixth form and its offer was predominantly AS level and A level with a small selection of Level Two and Level Three BTEC awards. The sample for this research was drawn from those in

AS classes. However, some of the participants at SFB reported they were also studying BTEC Level Three awards or A2 level. Table 2.2 outlines the courses that the participants reported to be studying.

Table 2.2. The self report of the courses that the participants were enrolled on at SFB.

Self reported courses.	Frequency	Percentage
AS levels	60	92.3
Level Three BTEC and AS levels	3	4.6
AS levels and A level	2	3.1
Total	65	100

Twenty six males and thirty nine females completed the questionnaires, a total of sixty five participants. The birthdates of the participants ranged from 22.03.92 to 23.08.94, indicating that some of the students at SFB were older than those at SFA. The mean point score for GCSEs already achieved was 51.18 with a standard deviation of 17.34. The median was 54 and multiple modes existed. The self reported ethnicity of the participants was wide ranging and is outlined in Appendix 1. Whilst 31 of the participants recorded themselves as 'White British', the majority stated a range of ethnicities. The perhaps expected descriptions of 'Black British' and 'British Asian' came from nine and eight participants respectively but others chose descriptions such as 'White Portuguese' through to 'Arab'.

2.4.3. Sixth Form C (SFC).

SFC was a large sixth form college in East London. It had a cohort of approximately one thousand nine hundred students and offered a wide range of AS and A2 level courses, as well as a range of vocational courses including BTEC courses at Levels One, Two and Three. The sample from SFC was collected from students in AS classes, the one year courses of BTEC Level One or Two and the first year of the BTEC Level Three programmes. All these courses are immediately accessible after completion of compulsory education and it was assumed prior to the data collection that the students would be of the same age as those in SFA or SFB. However, the birthdates of the participants ranged from 07.10.90 (twenty years old) to 28.08.94, and the 50th percentile

was 04.11.93, indicating that 50% of the participants in this sample who chose to report their birth dates were born before that date. Hence the sample at SFC was older than the samples of SFA or SFB. Furthermore, initial analysis of the data showed that the sessions in which the participants completed the questionnaire did not reflect the entirety of the courses that they were studying. Table 2.3 outlines this entirety. One hundred and four participants completed the questionnaire, forty five were male, fifty six were female and three did not report their gender.

Table 2.3. The self report of the courses that the participants were enrolled on at SFC.

Self reported courses	Frequency	Percentage
AS levels	23	22.1
Level Three, Travel and Tourism BTEC	17	16.3
Level Three, Business Studies BTEC	13	12.5
Level Two, Travel and Tourism BTEC	13	12.5
Level Three, Art and design BTEC	12	11.5
Level One Travel and Tourism BTEC	9	8.7
Level Three, Business Studies BTEC and GCSE	5	4.8
Level Three BTEC and AS levels	4	3.8
Level Two Art and Design BTEC	3	2.9
A Levels	2	1.9
Level Two Travel and Tourism BTEC and GCSE	1	1.0
Level Two Travel and Tourism BTEC and AS level.	1	1.0
Level Three BTEC, A level and GCSE	1	1.0
Total	104	100

The mean point score for GCSEs already achieved was 29.35, with a standard deviation of 18.04. The median was 31 but importantly the mode was zero. Fourteen students reported a zero score at GCSE, suggesting that either they had not taken GCSEs, or

chose not to report the grades. Like SFB, the self reported ethnicity at SFC was very mixed. The three biggest categories were 'British Asian' (20 participants), 'Black British' (12 participants) and 'White British' (seven participants). The majority of the participants recorded themselves using a wide spread (29) of different terms, ranging from 'British Turkish Cypriot' to 'African Arab French'. Appendix 1 outlines all the self reported ethnicities.

2.4.4. Sixth Form D (SFD).

SFD was another sixth form college in East London that enrolled approximately eleven hundred students each year. Like SFC, it had a curriculum offer that included a range of AS level and A2 courses, as well as vocational courses including BTEC courses at Levels One, Two and Three. It also provided the opportunity for GCSEs to be taken. The sample from SFD was accessed through AS classes, GCSE classes, and the first year cohort of the BTEC Level Three programmes. Again, these courses are immediately accessible after completion of compulsory education and I expected the students to be of the same age as those in SFA or SFB. However, the birthdates ranged from 13.01.90 (twenty one years old) to 17.08.94 and the 50th percentile was 23.04.93, indicating that 50% of the reported ages were older than 17 years. Moreover, analysis of the data showed that the sessions in which the participants completed the questionnaire did not reflect the entirety of the courses that they were studying. Table 2.4 describes the courses the participants reported they were studying. Ninety three participants completed the questionnaire at SFD, fifty males, forty two females and one who did not report his or her gender. The mean for the total GCSE point score was 33.69, with a standard deviation of 20.04. The median was 34 and the mode was zero as nine of the students did not record achieving any GCSEs. The self reported ethnicity of the participants at SFD was again very wide ranging. The largest categories were 'Black British', 'British Asian' and 'White British' (12, 12, and five participants respectively) but others reported being 'Black British Somalian' or 'White Romanian'. The complete list of the participants self reported ethnicities can be found in Appendix 1.

Table 2.4. The self report of the courses that the participants were enrolled on at SFD.

Self reported courses	Frequency	Percentage
AS levels	31	33.3
Level Three, Art and Design BTEC	12	12.9
AS levels and A level	9	9.7
Level Three BTEC and GCSE	9	9.7
Level Two Art and Design BTEC	9	9.7
Level Three, Business Studies BTEC	4	4.3
GCSEs	4	4.3
AS levels and GCSE	3	3.2
Level Three BTEC and AS levels	2	2.2
Level Three BTEC	2	2.2
Level Three, Information Technology BTEC	3	3.2
Level Three BTEC and A level	1	1.1
Level Three, Business Studies BTEC and GCSE	1	1.1
Level One BTEC and GCSEs	1	1.1
Total	91	97.8
No response	2	2.2
Total	93	100*

*Percentages are rounded to the nearest whole number.

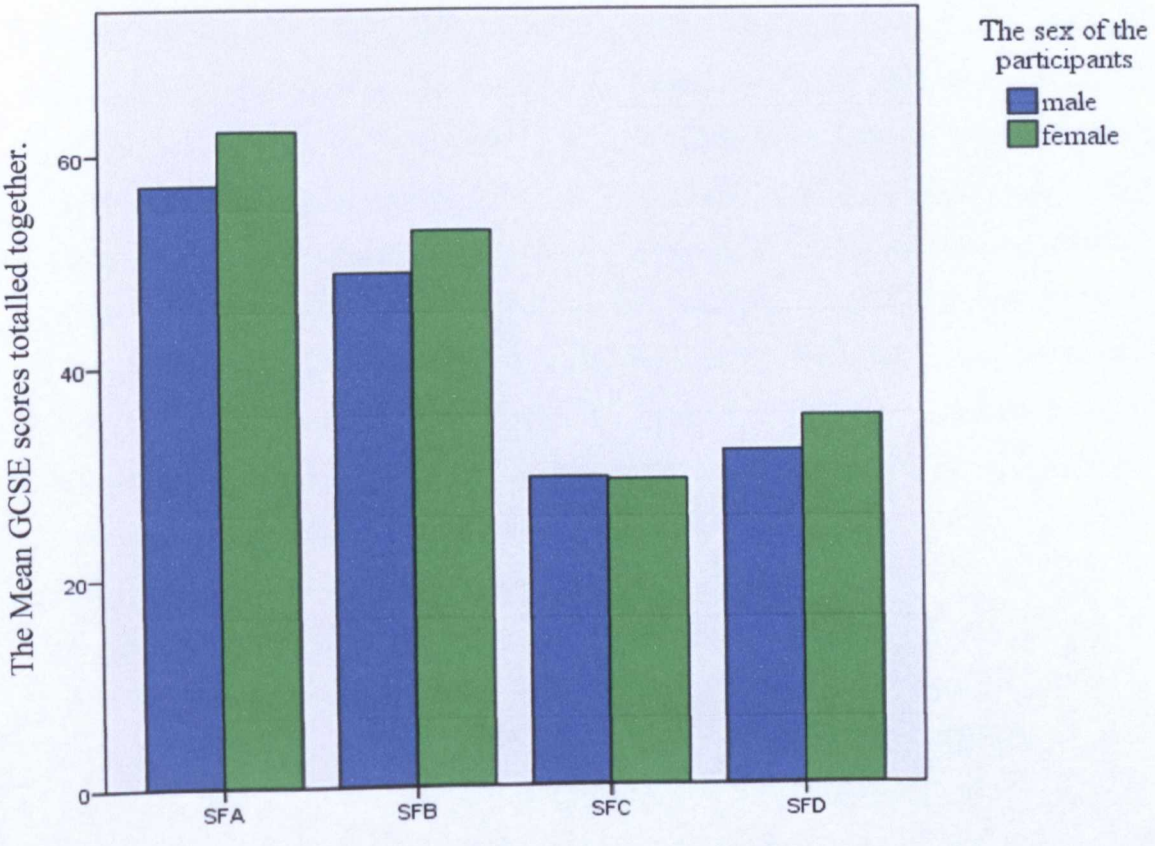
Table 2.5 summarises the numbers of participants from the four different sites. It shows how many males and females were involved in the sample altogether and it outlines the mean ages and the standard deviation from the mean age. Figure 2.1 demonstrates the self reported GCSE mean score for each site for males and females. It is clear that the mean score for GCSE at SFA for both males and females was greater than at SFB, which in turn was higher than SFC and SFD. SFC had the lowest self reported GCSE point score mean. However, at SFC the males reported a higher GCSE point score than the females. This was the only setting where that occurred.

Table 2.5. The overall profile of the participants.

Site	Number of participants	Females	Males	Mean year age (in decimals) and standard deviation (*SD*)
SFA	69	32	36	17.21 (*SD*, .27)
SFB	65	39	26	17.35 (*SD*, .51)
SFC	104	56	45	17.68 (*SD*, .87)
SFD	93	42	50	18.17 (*SD*, .95)
Total	331	169*	157*	17.65 (*SD*, .82)

*Note: some participants did not report gender.

Figure 2.1. The self reported GCSE mean score for each institution.



Within the institutions, the sample was opportunistic but it was also of considerable size. As the sites were in different locations, it was expected that the characteristics of each intake would be varied. Sites SFB, SFC and SFD indicate the diversity of cultural heritage of young people in the post-compulsory sector. Moreover, it can be suggested

that the age variance and the complexity of course choices at SFC and SFD are reflective of the churn in further education colleges that Wolf (2011) refers to. These participants constitute the real world of the post-compulsory sector in England in 2011. Their diversity indicates how disparate the sector is. I will now go on to describe the procedure for the gathering of the data. I will begin with the design of the questionnaire.

2.5. The design of the questionnaire.

The tool of measurement for this research was a questionnaire where the items could be scored and interpreted individually but also psychometrically, that is combined together to produce an overall scale. To construct the questionnaire, the procedures put forward by Rust and Golombok (2009) were adhered to. Rust and Golombok (2009) emphasise the importance of the researcher being clear about what it is they want to know. They advise that a test specification or framework is designed. This framework is often presented in grid form. It has along its horizontal axis the content areas that 'cover everything that is relevant to the purpose of the questionnaire' (Rust and Golombok, 2009, p. 213). Rust and Golombok (2009) suggest that the researcher then considers the ways that the content areas may make themselves manifest. They suggest that these manifestations are placed along the vertical axis of the framework. With the content areas along the horizontal axis, and the manifestations along the vertical axis, the researcher has a grid with multiple cells. Each cell in the grid represents the interaction of a content area with a manifestation. Rust and Golombok (2009) suggest that by writing items for the questionnaire that correspond to each cell of the grid, the researcher will ensure that 'all aspects that are relevant to the purpose of the questionnaire will be covered' (p. 214). Therefore, in this research a framework for the questionnaire was designed and then a pilot questionnaire was devised. This was tested in March 2011 and analysed in April 2011. The final questionnaire was prepared for administration in the summer term of 2011. The construction and administration of the pilot study will be outlined further below.

2.5.1. Constructing the pilot questionnaire.

As the function of the questionnaire was to capture the value that young people placed on the different dimensions of learning and their conceptualisations of learning, it had a priori content. The design of the questionnaire was 'completely determined by its use' (Rust and Golombok, 2009, p. 32). Adhering to the concept of the tension field of learning (Illeris, 2009), the content areas on the grid specification or blueprint were the content dimension of learning, the social dimension of learning and the emotional dimension of learning. There were seven manifestations for the content areas. These were the 'learning careers' of the students thus far (Hodkinson and Bloomer, 2000a), learning connected with the socio-economic context, the ideas of the learning self (Garcia and Pintrich, 1994; Dweck, 1999), the behaviours for learning, the levels of satisfaction or enjoyment for learning, the possibility of future changes through learning and finally, meta-cognition (Flavell, 1976). These manifestations were placed along the vertical axis of the grid. Figure 2.2 is the pilot blueprint. The manifestations of the content area generated 21 cells. These cells presented the latent variables that I as the researcher was interested in exploring but could not present directly to the participants. A direct approach would be considered both intrusive and irrelevant by post-compulsory students (Robson, 2002; Bell, 2010). However, I had to ensure that the questions I asked on the questionnaire measured the concepts I was interested in. Therefore, statements were designed for each of the cells on the blueprint. For some statements, the research tools utilised by Biggs (1987) were drawn upon. Biggs (1987) was interested in how learners react to learning in ways that were typical to them across situations. He devised a learning process questionnaire for secondary school students and a study process questionnaire for use with students in higher education. Seven statements from those questionnaires were adapted for this instrument. These included 'I try to relate what I have learned in lessons to something I already know' and 'I find that learning can give me a deep sense of personal satisfaction'. The first item was placed in cell 19 as it was intended to capture the content dimension and the manifestation of meta-cognitions. The second item was placed in cell 13 because it represented a combination of the content dimension and the manifestation of the

Figure 2.2. The pilot questionnaire blueprint.

Content Areas					
		The content dimension of learning	**The emotional dimension of learning.**	**The social dimension of learning.**	Totals
Manifestations	**The 'learning careers' of the students thus far.**	3* Cell 1	4 Cell 2	4 Cell 3	11
	Learning connected with the socio-economic context.	3 Cell 4	4 Cell 5	3 Cell 6	10
	The ideas of the learning self / self identity as learners: Incremental or entity self.	4 Cell 7	4 Cell 8	5 Cell 9	13
	The behaviours for learning.	5 Cell 10	5 Cell 11	5 Cell 12	15
	The enjoyment/satisfaction of / or lack of satisfaction enjoyment in learning (learning for self).	4 Cell 13	3 Cell 14	4 Cell 15	11
	The possibility of positive future changes through learning – learning careers from here on in.	4 Cell 16	5 Cell 17	4 Cell 18	13
	Meta-cognitions	5 Cell 19	3 Cell 20	3 Cell 21	11
Totals =		28	28	28*	84**

*Each content area has a total of 28 items, constructed of 3 x 4, 2 x 5 and 2 x 3 items.
**The number of items in the pilot – to be reduced in the real questionnaire.

enjoyment or satisfaction of learning. Dweck (1999) has designed several instruments to assess learning and performance goals. Drawing on these, the item 'when I was doing my GCSEs, I was motivated to get good grades' was placed in cell 2 to measure the emotional dimension of learning with the manifestation of the learning careers of the students thus far. It was intended that each cell on the blueprint would have an equal weighting through an equal number of items but this led to much duplication. However, it was possible to ensure that each content area of the blueprint had a total of twenty eight items. Thus, Illeris's (2009) three dimensions of learning were included equally and the pilot questionnaire had eighty four rating scale items.

The items were written on small cards and shuffled to randomise the order. To avoid the potential for acquiescence, twenty eight of the items were written as reverse statements. The participants were given a forced choice of strongly disagree, disagree, agree, strongly agree. This was chosen so that unequivocal responses were generated and ambivalence from the respondents was avoided (Cohen et al., 2007). It might also reduce the potential for discrimination based on how articulate the respondents were (Cohen et al., 2007). All the statements were given a score from one to four. The reversed (R) statements were given a score from one to four in the opposite order.

The final section of the pilot questionnaire included some questions that allowed for the gathering of normative nominal data such as the GCSEs the participants had already achieved and the courses they were currently studying. Appendix 2 shows the questionnaire pilot.

2.5.2. Administering the pilot questionnaire.

The draft questionnaire was administered on March 22nd and March 28th 2011 with students from site SFC. They were from three different classes either studying courses in Performing Arts AS, Performing Arts BTEC or Business Studies AS. These students were representative of the sample from which I intended to collect data. I went to each class and I outlined the purpose of the research. I explained that the questionnaire was a pilot and asked the students to comment on the quality of the survey on the last sheet. I

provided the students with an information leaflet and asked for their consent. Forty students completed the questionnaire within thirty minutes.

2.5.3. Evaluating the pilot questionnaire and constructing an instrument fit for purpose.

This inaugural experience alerted me to some challenges. Firstly, a participant in the Performing Arts BTEC class struggled with the questionnaire. When the host teacher asked her to try to concentrate, she articulated that she was infuriated by the statements and could not focus on the questionnaire because she found it irrelevant. Secondly, several of the participants said many of the statements were repetitive. Thirdly, participants in the Business Studies class suggested that there needed to be a place to indicate a neutral response for the statements. The informal feedback was invaluable for the construction of the final questionnaire. Whilst I had followed the suggestion by Rust and Golombok (2009) to use many more statements in the pilot study than I would in the final questionnaire, this seemed to have led to the generation of some statements that were far too similar in the minds of the participants. If the final questionnaire was to be acceptable to a great number of sixteen to nineteen year olds, it was essential that I gave further consideration to these initial challenges.

It was imperative to reduce the number of items. Therefore, I conducted an item analysis of the statements by examining the facility and the discrimination of each item (Rust and Golombok, 2009). I began by entering the scores for each of the participant's items into an item analysis table. For this, I used an Excel spreadsheet. To examine the facility of each item, I summed the total score for each statement and then divided this by the total number of respondents. If the result was approaching either 4 or 1, thereby indicating that most participants had responded in the same way, I discarded the statement from the final version of the questionnaire. To examine the discrimination of each item, that is the ability of the questionnaire to discriminate the respondents according to the value they placed on the dimensions of learning, the score for each item was correlated with the total score for the questionnaire. This was done using the Pearson product-moment formula (Rust and Golombok, 2009). Items with correlations

of less than 0.2 were excluded, except where it would mean that a cell from the blueprint would not be represented in the questionnaire. The analysis of the pilot questionnaire eventually led to the discarding of twenty six items. Fifty eight statements to be rated remained. Of these, twenty one items were designed to measure the content dimension of learning, eighteen items were to assess the emotional dimension of learning and nineteen items were designed to measure the social dimension of learning. Each item was re-considered for clarity. Figure 2.3 shows the final blueprint.

I then considered the concern of the participants in the Business Studies class who suggested that there ought to be a place to indicate a neutral response for the statements. This concern was not repeated by the majority of the participants in the pilot. Those in the other classes were nonplussed by the absence of such a choice and felt that if they didn't want to respond they would leave the statement blank. Therefore, it was decided that with the decrease in the number of statements, and the re-examination of the wording of each statement, the existing format would remain.

Finally, I adapted the wording of the questionnaire to ensure that it was appropriate for those in the Sixth Form Colleges (Appendix 3) and those in the Sixth Form centres attached to schools (Appendix 4). On April 19th 2011, I had copies of each questionnaire printed.

2.5.4. Administering the questionnaire.

The final questionnaires were administered to young people in the sixth form colleges and sixth form centres between April 26th 2011 and May 9th 2011. During this time I visited seventeen lessons in the four sites from which the sample was drawn. On each occasion, the host teacher allowed me to have some time to ask the students to complete the questionnaire. The sessions ranged from a whole year group tutorial session at site SFA to Maths GCSE and Media Studies AS lessons at site SFD, Sociology sessions at SFB and Travel and Tourism sessions at SFC. As with the pilot questionnaire, on every occasion I explained the purpose of the research, and I offered to answer questions to ensure that the consent was informed. Sometimes I was asked challenging questions by

Figure 2.3. The final questionnaire blueprint.

Content Areas					
		The content dimension of learning	**The emotional dimension of learning.**	**The social dimension of learning.**	Totals
Manifestations	**The 'learning careers' of the students thus far.**	3 Cell 1	2 Cell 2	2 Cell 3	7
	Learning connected with the socio-economic context.	2 Cell 4	2 Cell 5	2 Cell 6	6
	The ideas of the learning self / self identity as learners: Incremental or entity self.	4 Cell 7	2 Cell 8	3 Cell 9	9
	The behaviours for learning.	3 Cell 10	4 Cell 11	4 Cell 12	11
	The enjoyment/satisfaction of / or lack of satisfaction enjoyment in learning (learning for self).	2 Cell 13	3 Cell 14	3 Cell 15	8
	The possibility of positive future changes through learning – learning careers from here on in.	2 Cell 16	3 Cell 17	3 Cell 18	8
	Meta-cognitions	5 Cell 19	2 Cell 20	2 Cell 21	9
Totals =		21	18	19	58

the young people about how engaging with the questionnaire was in their interest and I was delighted that my answers satisfied their curiosity so that each student did respond positively.

The questionnaires took participants between ten minutes and twenty minutes to complete. I stayed with the students whilst they thought through their responses and this allowed for dialogue and assurance when students felt unable to answer various statements. For instance, a few students had not been educated in Britain prior to their sixth form studies and so they wanted to ignore statements on their Year 10 and Year 11 experiences. They were assured that this was acceptable.

After each class of students had finished the questionnaire, I collected their papers and I thanked them. By May 9th 2011, I had collected three hundred and thirty one completed questionnaires.

2.6. Ethics.

The British Psychological Society (BPS) (BPS, 2006) ethical guidelines were adhered to throughout this research. Initially I requested permission to carry out the research from the principals of the four sites I had chosen. I did this by letter in February 2011 (Appendix 5). On receiving permission from the sites I was able to liaise directly with classroom teachers with whom I had a professional relationship, either as colleague, trainee teacher or mentor of the trainees. They discussed with me times when it would be convenient to administer the questionnaires and their support was invaluable for accessing the participants. Even so, it was not the classroom teachers that were to complete the questionnaires; the real consent had to come from the participants. I have already outlined how I used SFC to pilot the questionnaire and this was also an opportunity to assess the ethical procedures.

For the pilot questionnaire, I devised an information sheet that explained the purpose of the research fully (Appendix 6). It was expected the students would sign the sheet to demonstrate informed consent. However this principle was negated when it became

apparent that the students were happy to sign the form without reading the information. Therefore when administering the final questionnaire, I chose to verbally explain the research, make sure I was present to answer any questions fully and stressed that participants could withdraw if they wished. I limited the information sheet to a small paragraph for participants to read if they wanted to (Appendix 7) and I no longer asked for signatures to indicate permission. Instead I emphasised that if the participants had any concerns or wanted to talk with me further my contact details were on the information sheet.

Also whilst administering the pilot questionnaire, I asked students for feedback on whether they found the statements distressing or intrusive. They said that they did not. They found the language accessible and familiar. Hence for the final questionnaire, I felt able to keep the language and format of the first questionnaire

2.7. The analysis of the data from the questionnaires.

The results from the questionnaires were analysed using the computer package Statistical Package for the Social Sciences (SPSS). It was expected from the piloting procedure that the facility and discrimination of each item would be adequate. To confirm this every participant's score was entered into SPSS and the frequencies for each item were examined. Moreover, the range, mean and standard deviation for the responses to each statement were explored. To assess whether the items measured what they were intended to measure, that is the three dimensions of learning, a principal components analysis (PCA) was adopted. The principal component analysis will be justified in Chapter 4. Here it is suffice to say that it allowed for explicit and robust categorisation of the variables of interest. Once the variables had been established through the PCA, potential differences and similarities between participants were explored. Multiple analysis of variance and analysis of variance procedures were employed to compare the values of different groups.

2.8. Summary of Chapter 2.

In Chapter 2, the research questions have been presented. The theoretical framework for the methodology has been justified. The sample and the procedure have been described. The construction of the questionnaire has been outlined thoroughly and shown to be grounded in the work of Rust and Golombok (2009). It is appropriate now to consider the data that the procedure reaped.

Chapter 3. Findings: Frequencies, means and standard deviations.

All of the statements were agreed to by at least one participant. Thirty seven of the statements had 70% of the responses within either the strongly disagree (SD) and disagree (D) category or the agree (A) or strongly agree (SA) category. Some of the responses had very high agreement rates; ninety one percent of the participants either agreed or strongly agreed with the statement 'I think that employers value good qualification grades that show them what I know' and 90% agreed with the statement 'if I want to get a good job, or go to university, I'm going to need to show that I have lots of knowledge in my head'. Such consensus of response indicates that the participants were very conscious that knowledge is valued highly and that their own knowledge and qualifications were tools by which they would be assessed. Moreover, there was acknowledgement of the competitive socio-economic context within which the participants had to make their future choices. Interestingly, both of these statements were drawn from the twenty one items designed to measure the content dimension of learning. Not all the statements within the content area generated such emphatic responses. To explore the nuances further, this chapter will consider the statements designed to capture the value given to the different dimensions of learning separately. I will begin by outlining the descriptive findings for the statements of the content dimension. This will be followed by the descriptive statistics for the statements of the social dimension. Finally the statements intended to capture the value for the emotional dimension will be explored.

3.1. The content dimension of learning.

Table 3.1 shows the frequencies in percentage form with which each item in the content dimension was responded to with strongly disagree (SD), disagree (D), agree (A) or strongly agree (SA). The figures in brackets are the raw scores from the participants. The number of participants who responded to the statement overall is recorded (N). The table also shows the mean score and standard deviation for each item. The items are presented in descending mean order. As each statement had a range of three, therefore demonstrating the full breadth of responses, this is not included in the table.

It is of note that the five highest means for the statements relating to the content dimension of learning were concerned with the participants' perceptions of the future and the need to learn information to succeed, whether it be in work or in higher education. Four of the statements were drawn from cells four and sixteen in the blue print shown in Figure 2.3. Cell four was designed to capture the manifestation of the socio-economic context and cell sixteen was designed to explore future learning careers. The statement with the highest mean score (M = 3.26, SD, .79) was 'I am sure I will not need to learn new information to go forward in life'. This reversed statement was disagreed with by 87%, 42% of whom disagreed with it strongly.

Table 3.1. Items for the content dimension of learning, percentage frequency of response, the mean scores and standard deviations.

Item	S D (%)	D (%)	A (%)	SA (%)	*M*	*SD*	N
St.50. I am sure I will not need to learn new information to go forward in life. (R) Cell 16*	41.6 (137)	45.3 (149)	10.0 (33)	3.0** (10)	3.26	.79	329
St.57. If I want to get a good job, or go to university, I'm going to need to show that I have lots of knowledge in my head. Cell 4	1.2 (4)	8.8 (29)	54.3 (178)	35.7 (117)	3.24	.66	328
St.45. I think that employers value good qualification grades that show them what I know. Cell 4	0.9 (3)	8.2 (27)	57.4 (189)	33.4 (110)	3.23	.63	329
St.52. I think when I leave here, I will build on the knowledge I have learned with new knowledge. Cell 16	0.6 (2)	8.9 (29)	66.9 (218)	23.6 (77)	3.13	.58	326
St.48. There is so much information to understand that I think learning is something that I will do throughout my life. Cell 7	4.0 (13)	12.6 (41)	56.9 (185)	26.5 (86)	3.06	.74	325
St.49. I try to make connections between what I have just learned and what I already know. Cell 10	1.5 (5)	12.0 (39)	66.0 (215)	20.6 (67)	3.06	.62	326
St.43. I am not enjoying what I am learning at college right now. (R) Cell 13	31.1 (101)	47.7 (155)	15.7 (51)	5.5 (18)	3.04	.83	325
St.10. I have a strong drive to do best in all my studies. Cell 7	2.4 (8)	18.5 (61)	53.3 (176)	25.8 (85)	3.02	.76	330
St.58. When I get an assignment back, I go over it carefully correcting all the errors and trying to understand where I made mistakes. Cell 10	2.1 (7)	18. 4 (60)	55.5 (181)	23.9 (78)	3.01	.72	326
St.12. I try to relate what I have learned in lessons to something I already know. Cell 19	1.8 (6)	14.9 (49)	64.9 (213)	18.3 (60)	3.00	.64	328
St.29. I find that learning can give me a deep sense of personal satisfaction. Cell 13	5.2 (17)	13.5 (44)	60.3 (196)	20.9 (68)	2.97	.75	325
St.54. In Year 10 and/or 11, I found it was always important to know as much as possible. Cell 1	3.4 (11)	18.4 (60)	57.5 (188)	20.6 (67)	2.95	.72	326
St.16. When I was in Year 10 and /or 11, I learned things by going over and over them until I knew them by heart.	6.4 (21)	24.1 (79)	48.2 (158)	21.3 (70)	2.84	.83	328

Cell 1							
St.21. I try to apply ideas from lessons to other activities. Cell 19	2.1 (7)	25.5 (84)	60.8 (200)	11.6 (38)	2.82	.65	329
St.19. I am not interested in learning information for the sake of it.(R) Cell 7	19.0 (62)	48.9 (160)	26.0 (85)	6.1 (20)	2.81	.81	327
St.5. I memorise key words, to remind me of important concepts in lessons. Cell 19	5.5 (18)	21.8 (72)	61.2 (202)	11.5 (38)	2.79	.71	330
St.27. I test myself on important topics until I understand them completely. Cell 7	3.0 (10)	31.6 (104)	50.5 (166)	14.9 (49)	2.77	.73	329
St.36. When I was doing my GCSEs, I thought learning was about absorbing facts. Cell 1	4.9 (16)	29.4 (96)	52.9 (173)	12.8 (42)	2.74	.74	327
St.20. Soon after a lesson, I think over what we have learned to make sure I understand it. Cell 10	7.3 (24)	37.6 (123)	49.2 (161)	5.8 (19)	2.54	.72	327
St.7. I tend to learn what is set, I usually don't do anything extra. (R) Cell 19	4.6 (15)	40.6 (132)	46.5 (151)	8.3 (27)	2.42	.71	325
St.51. Soon after a lesson, I re-read my notes to make sure I understand them. Cell 19	9.0 (29)	51.9 (168)	36.7 (119)	2.5 (8)	2.33	.67	324

*Note (R) indicates that the scores for the statement have been reversed when calculating the mean.
**Percentages are rounded to one decimal point.

Five items within the content dimension were designed to address the manifestation of meta-cognition and three items were designed to explore behaviours for learning. In the blueprint, these were in cells 19 and 10. Interestingly these statements tended to generate a lower mean than those regarding knowledge. Hence, the statement 'soon after a lesson I re-read my notes to make sure I understand them' had a mean of 2.33, and an *SD* of .67. Indeed, of the 324 respondents, 197 (61%) disagreed with this statement. Responses to three further statements also indicated that meta-cognitive strategies were not always adopted. Fifty five percent of the participants agreed with the statement 'I tend to learn what is set, I usually don't do anything extra' ($M = 2.42$, *SD*, .71). Fifty five percent of the participants also agreed with the item 'soon after a lesson I think over what we have learned to make sure I understand it' ($M = 2.54$, *SD*, .72), indicating that 45% did not. And 27% of the participants disagreed with the statement 'I memorise key words to remind me of important concepts in lessons' ($M = 2.79$, *SD*, .71).

Even so, there was some indication that the participants had some cognitive skills with which to approach their learning. A high mean ($M = 3.06$, *SD*, .62) was recorded for 'I try to make connections between what I have just learned and what I already know',

with 87% of the participants agreeing or strongly agreeing with the statement. There was also a high mean ($M = 3.01$, *SD*, .72) and strong agreement (79%) for the statement 'when I get an assignment back I go over it carefully correcting all the errors and trying to understand where I made mistakes'.

It is clear then from the items designed for the evaluation of the value for the content dimension of learning that the participants were very aware of the need for knowledge and reported having some cognitive strategies with which to approach the acquisition of knowledge. However, the latter was not as uniformly endorsed as the former. Of course, alone, these values for learning are not adequate for a comprehensive theory of learning (Illeris, 2002). The next section explores the items for the social dimension of learning.

3.2. The social dimension of learning.

Table 3.2 shows the frequencies in percentage form with which each item in the social dimension was responded to with SD, D, A or SA. The format is similar to Table 3.1. The figures in brackets are the frequencies from the participants and the items are presented in descending mean order.

Interestingly and mirroring the response for the content dimension of learning, the statement that scored the highest mean ($M = 3.33$, *SD*, .66) in the social dimension of learning was also related to future prospects. This was 'it is so competitive today that to get a good job you need to show you are really willing to work with others', 92% of the participants agreed with the statement. The item was from cell six on the blueprint, which like cell four was designed to explore the manifestation of the socio-economic context. Another item from cell six also scored highly; 82% of the participants agreed that 'even though the times are tough, I think I will be able to get a good job because I show that I am willing to learn with others' ($M = 3.01$, *SD*, .64). It is feasible that the participants were expressing awareness that in the future they would not be judged just on their knowledge but also their willingness to actively participate with others.

A further three statements with high means suggested that there was a strong appreciation for the need to ask, and be asked questions. Eighty eight percent of the participants agreed with the statement 'I like it when teachers give us time to ask questions about stuff we don't understand' ($M = 3.23$, *SD*, .71). 'I know that being asked questions in class is good for my learning' was agreed with by 91% of the participants ($M = 3.20$, *SD*, .66). Further, the reversed item 'I think if I ask a teacher or my friends a question it shows that I am not very smart' was disagreed with by 80% of the participants, refuting any suggestion that asking questions could be problematic. Even so, the item 'I always ask questions if I need to understand something' had a mean of 2.89 (*SD, .80)* indicating that this acceptance of the value of questions did not consistently translate into learning behaviour.

Table 3.2. Items for the social dimension of learning, percentage frequency of response, the mean scores and standard deviations.

Item	S D (%)	D (%)	A (%)	SA (%)	*M*	*SD*	N
St.40. It is so competitive today that to get a good job you need to show you are really willing to work with others. Cell 6	1.2** (4)	7.0 (23)	49.8 (164)	41.9 (138)	3.33	.66	329
St.26. I like it when teachers give us time to ask questions about stuff we don't understand. Cell 21	2.1 (7)	10.1 (33)	50.8 (166)	37.0 (121)	3.23	.71	327
St.56. I know that being asked questions in class is good for my learning. Cell 21	2.1 (7)	7.1 (23)	59.5 (194)	31.3 (102)	3.20	.66	326
St.17. I do not look forward to having to learn with others in the future. (R) Cell 18*	29.4 (96)	58.6 (191)	9.8 (32))	2.1. (7))	3.15	.68	326
St.32. I think if I ask a teacher or my friends a question it shows that I am not very smart. (R) Cell 9	33.3 (109)	46.8 (153)	14.4 (47)	5.5 (18)	3.08	.83	327
St.24. I like to learn with other people. Cell 9	2.4 (8)	12.8 (42)	66.1 (216)	18.7 (61)	3.01	.64	327
St.13. Even though the times are tough, I think I will be able to get a good job because I show that I am willing to learn with others. Cell 6	3.1 (10)	15.0 (49)	60.2 (197)	21.7 (71)	3.01	.64	327
St.4. I find learning with others in sixth form a hassle.(R) Cell 15	20.1 (66)	62.5 (205)	13.7 (45)	3.7 (12)	2.99	.70	328
St.28. I don't like to talk about what I have learned. (R) Cell 9	21.3 (70)	50.2 (165)	24.6 (81)	4.0 (13)	2.89	.80	329
St.44. I always ask questions if I need to understand something. Cell 12	5.7 (19)	20.5 (68)	52.9 (175)	20.8 (69)	2.89	.80	331
St.2. The course/s I am doing now has made me realise how enjoyable it is to learn with others. Cell 15	2.7 (9)	23.3 (77)	59.1 (195)	14.8 (49)	2.86	.69	330
St.33. When I was in Year 10 and/or 11, I found learning to be best when I had someone to talk over the learning with. Cell 3	1.5 (5)	27.9 (90)	55.7 (180)	14.9 (48)	2.84	.68	323

St.6. To be a good learner in the future, I will talk over new information with friends. Cell 18	3.7 (12)	21.8 (71)	65.3 (213)	9.2 (30)	2.80	.65	326
St.41. In class, I feel I am part of something meaningful when I am discussing subjects with other people. Cell 15	4.3 (14)	23.1 (76)	62.0 (204)	10.6 (35)	2.79	.68	329
St.15. I can't wait to leave sixth form/college so that I no longer have to ask or answer any questions. (R) Cell 18	18.0 (58)	50.0 (161)	21.4 (69)	10.6 (34)	2.75	.87	322
St.31. In Year 10 and/or 11, the lessons I enjoyed the least were the ones where we were put into groups. (R) Cell 3	17.7 (58)	45.1 (148)	25.3 (83)	11.9 (39)	2.69	.90	328
St.18. When I want to learn something, I seek out friends to study with. Cell 12	7.1 (23)	39.5 (128)	46.9 (152)	6.5 (21)	2.53	.72	324
St.37. When I am learning at home, I talk over what I am learning with my friends or parents. Cell 12	15.2 (50)	42.2 (139)	35.6 (117)	7.0 (23)	2.34	.82	329
St.46. Even if I have trouble learning the material in lessons, I try to do the work on my own, without help from anyone. (R) Cell 12	4.3 (14)	28.5 (93)	55.2 (180)	12.0 (39)	2.25	.72	326

*Note (R) indicates that the scores for the statement have been reversed when calculating the mean.
**Percentages are rounded to one decimal point.

Many participants recorded enjoying learning with others; eighty five percent of the participants agreed with the statement 'I like to learn with other people' ($M = 3.01$, *SD,* .64) and 89% of the participants disagreed with the item 'I do not look forward to having to learn with others in the future ($M = 3.15$, *SD,* .68). Again, such appreciation did not always manifest into expected action. The mean score for 'when I want to learn something, I seek out friends to study with' was 2.53 (*SD, .72*), with just 55% agreeing or strongly agreeing with the statement. Fifty seven percent agreed or strongly agreed with the statement 'when I am learning at home, I talk over what I am learning with my friends or parents' ($M = 2.34$, *SD,* .82). These two items were from cell 12 of the blueprint, designed to capture the interaction of the social dimension of learning and behaviours for learning. It is possible that whilst participants enjoyed learning with others, they were ambivalent that doing so would be a productive aspect of the learning process. Finally, there was an acknowledgement that learning could be an individual activity. Two hundred and nineteen participants (67%) agreed or strongly agreed with the statement 'even if I have trouble learning the material in lessons, I try to do the work on my own, without help from anyone'. As a reversed item this scored the lowest mean in the social dimension ($M = 2.25$, *SD,* .72). Yet of the 67% who agreed with the statement, only 12% strongly agreed and given that 33% of the participants did not agree with the statement, it might be that whilst there is acknowledgement that learning can be individual, it was not the preferred choice.

3.3. The emotional dimension of learning.

Table 3.3 shows the frequencies in percentage form with which each item in the emotional dimension was responded to with SD, D, A or SA. Again, the format is similar to Table 3.1. The figures in brackets are the frequencies and the items are presented in descending mean order.

In contrast to the content dimension of learning and the social dimension of learning, statements that were designed to measure the manifestation of the socio-economic context generated a lower mean for the emotional dimension of learning. Indeed, the reversed item 'young people are having such a hard time at the moment, it makes it difficult to study' scored the lowest mean of 2.24 (*SD,* .99). Sixty one percent of the participants agreed with this statement, 26% of whom agreed with it strongly. Moreover, 151 participants (46%) agreed with the statement 'I find thinking about my future stressful and it has a bad effect on my learning' ($M = 2.54$, *SD,* .89). The responses from the participants for these statements were more evenly spread between the four choices, with large standard deviations. Therefore, it can be tentatively suggested that whilst the participants recognised the value of the content dimension and the social dimension of learning for their future in the socio-economic context, when they were thinking of their own futures, they were emotionally more ambivalent.

Table 3.3. Items for the emotional dimension of learning, percentage frequency of response, the mean scores and standard deviations.

Item	S D (%)	D (%)	A (%)	SA (%)	*M*	*SD*	N
St.1. I am motivated to be the best that I can be, just for myself. Cell 17	0.9** (3)	14.3 (47)	55.6 (183)	29.2 (96)	3.13	.68	329
St.55. I don't think that I need to be in the right mood to learn successfully. (R) Cell 20*	32.8 (107)	47.5 (155)	16.3 (53)	3.4 (11)	3.10	.79	326
St.53. I don't really want to be doing the course/s I am doing, and so staying motivated is difficult. (R) Cell 14	29.9 (97)	46.6 (151)	16.4 (53)	7.1 (23)	2.99	.87	324
St.38. I am not a good student; I am always behind with my assignments. (R) Cell 11	32.6 (106)	38.5 (125)	20.9 (68)	8.0 (26)	2.96	.93	325
St.23. When I was doing my GCSEs, I was very motivated to get good grades. Cell 2	5.8 (19)	24.0 (78)	42.8 (139)	27.4 (89)	2.92	.86	325
St.8. The course/s I am on is so interesting, I am very happy to study for it. Cell 14	4.9 (16)	19.4 (63)	56.2 (182)	19.4 (63)	2.90	.76	324

St.34. To do my best when I am learning, I often take small breaks so that I can stay calm. Cell 20	5.1 (17)	19.9 (66)	55.6 (184)	19.3 (64)	2.89	.77	331
St.30. As I look to the future, I am motivated to find happiness through learning. Cell 17	3.6 (12)	22.1 (73)	58.0 (192)	16.3 (54)	2.87	.72	331
St.35. My heart isn't in my course/s at Sixth Form college so I find it hard to learn. (R) Cell 14	26.3 (86)	41.3 (135)	23.2 (76)	9.2 (30)	2.85	.92	327
St.14. In the future, I will be very motivated to learn only if my job depends on it. Cell 17	5.8 (19)	25.8 (84)	50.9 (166)	17.5 (57)	2.80	.79	326
St.9. I think that GCSE exams at school can be so stressful it is difficult to learn. (R) Cell 2	18.3 (60)	47.0 (154)	26.2 (86)	8.5 (28)	2.75	.85	328
St.47. I am motivated to do well, so I try to work solidly all the way through the term. Cell 11	5.2 (17)	30.3 (99)	52.6 (172)	11.9 (39)	2.71	.74	327
St.3. I find sixth form/college learning stressful, I don't want to do anymore than I have to.(R) Cell 8	12.8 (42)	44.7 (147)	34.3 (113)	8.2 (27)	2.62	.81	329
St.42. I find thinking about my future stressful and it has a bad effect on my learning. (R) Cell 5	13.5 (44)	40.4 (132)	32.7 (107)	13.5 (44)	2.54	.89	327
St.39. What I am learning now is difficult; I must be emotionally strong to manage it. Cell 8	13.8 (45)	35.4 (115)	40.3 (131)	10.5 (34)	2.47	.86	325
St.25. I often get frustrated in class and this stops me from concentrating. (R) Cell 11	10.9 (36)	36.2 (119)	32.5 (107)	20.4 (67)	2.38	.93	329
St.22. I spend a lot of time finding out about new topics. Cell 11	6.8 (22)	54.3 (176)	33.6 (109)	5.2 (17)	2.37	.69	324
St.11. Young people are having such a hard time at the moment, it makes it difficult to study. (R) Cell 5	11.3 (37)	27.3 (89)	35.0 (114)	26.4 (86)	2.24	.99	326

*Note (R) indicates that the scores for the statement have been reversed when calculating the mean.

**Percentages are rounded to one decimal point.

The item with the highest mean score in the statements for the emotional dimension of learning was related to motivation; 85% percent of the participants agreed or strongly agreed with the statement 'I am motivated to be the best that I can be, just for myself', ($M = 3.13$, *SD*, .68). The confirmation of high motivation was reiterated with the 77% disagreement rate for the statement 'I don't really want to be doing the course/s I am doing so staying motivated is difficult' ($M = 2.99$, *SD*, .87). This item indicates that many of the participants were comfortable with the programmes they were following. Yet the agreement level for 'I am motivated to do well, so I try to work solidly all the way through the term' fell to 65% ($M = 2.71$, *SD*, .74) and strikingly the agreement for 'I spend a lot of time finding out about new topics' fell to 39% ($M = 2.37$, *SD*, .69). On the other hand, 71% of the participants disagreed with the statement 'I am not a good student; I am always behind with my assignments'. Perhaps some participants felt obliged to do as well as they could in the formal learning environment, but were not as

motivated outside of that context. Intrinsic motivation for learning might not have been as high as extrinsic motivation.

Two statements were designed to capture the manifestation of meta-cognition within the emotional dimension. Seventy five percent of the participants agreed with the statement 'to do my best when I am learning, I often take small breaks so that I can stay calm' (*M* = 2.89, *SD*, .77). The mean for 'I don't think that I need to be in the right mood to learn successfully' was 3.10 (*SD*, .79). Remembering that this was a reversed statement, it is of interest that 262 (80%) of the 326 participants were indicating that they were aware that the emotions they had could impact on their learning.

Nevertheless, it is of note that only two items designed to measure the value placed on the emotional dimension of learning scored a mean higher than three. It is appropriate now to compare the overall differences of the means for the items intended to capture the value given to the different dimensions.

3.4. The differences between the statements for each dimension.

In Sections 3.1 and 3.2, it was demonstrated that a high percentage of participants were very clear that they needed to be able to show that they were knowledgeable and able to work in groups if they were to succeed in the future. This was coupled with an awareness of the challenges awaiting them and deriving from the current socio-economic context. Concurrently, there was some indication from the scores for the items within the emotional dimension of learning that such a context could be interfering with the young people's perceived capability to manage their learning. It is worth reiterating that the reversed statement 'young people are having such a hard time getting a job at the moment, it makes it difficult to study' had the lowest mean score from all fifty eight items (*M* = 2.24, *SD*, .99). However, if there is a relationship between the socio-economic context and the emotional dimension it must not be over-emphasised. It is just one tentative suggestion.

To explore the differences between the statements further, the mean scores for the items measuring each different dimension of learning were established. This was done by taking into account the reversed scores, adding the scores for each item in a dimension together and dividing by the number of items. These overall means were then compared. Table 3.4 reports the statistics.

Table 3.4. The mean scores for the items categorised into three dimensions.

The learning dimension	Mean score for all the items.	The standard deviation for all the items.	The Range for all the items.	Number of items.
The content dimension of learning.	2.91	.25	.93	21
The social dimension of learning.	2.88	.29	1.08	19
The emotional dimension of learning.	2.75	.26	.89	18

It can be seen from Table 3.4 that the mean scores for the responses measuring the items within each dimension of learning indicated that overall the participants expressed positive regard for all the aspects of learning that they were asked to consider. This is because the mean scores were always greater than two. It is evident that the scores generated for the items measuring the content dimension of learning ($M = 2.91$, *SD*, .25) were greater than all the items measuring the social dimension for learning ($M = 2.88$, *SD*, .29) which was in turn greater than the scores for all the responses measuring the emotional dimension of learning ($M = 2.75$, *SD*, .26). Of note is the range of the scores. This was greatest for the items in the social dimension of learning where there was a high mean for the item capturing the idea of the need to learn with others in the future and a low mean for the item suggesting the need to learn on one's own if necessary (see Table 3.2). Here, the contrast highlights not just the complexity of the participants' values towards aspects of learning but also the intricacy required to examine them.

Using a repeated measures ANOVA, the differences between the means were found to be statistically significant $F(2, 34) = 55.87, p < .05, \eta^2 = .77$. The effect size of eta squared (η^2) has been reported to show the proportion of variance that was related to the different groups (Green et al., 2000). An effect size of .77 indicates that the differences between the scores within the groups were small but the differences between the means were considerable (Field, 2009). Such evidence indicates that for the participants in this

study, the content dimension for learning was valued more highly than the social dimension for learning, which in turn was valued more highly than the emotional dimension for learning.

3.5. Summary of Chapter 3.

This chapter has explored the responses to the items using descriptive and inferential statistics. It has been found that a high percentage of the young people in the study felt that they needed to have knowledge and information and the ability to work with others to succeed in the future. It also showed from the items designed for the emotional dimension of learning that a high percentage of the participants felt motivated and were happy following the programmes they had chosen. Moreover, the items for the social dimension of learning showed that the participants reported enjoying learning with others. Items within this dimension of learning also captured an appreciation for the need to be asked and ask questions. Yet beyond that it was found that items designed to measure learning behaviours and meta-cognitive approaches across the three dimensions were not agreed with as consistently. The inferential statistics demonstrated that the overall mean values reported for the items within the three dimensions of learning were significantly different. The content dimension of learning was most consistently endorsed.

These preliminary findings overlook the nuanced complexity within the data. Firstly, the analysis thus far assumes that the items that were constructed for the questionnaire were a true reflection of the three dimensions of learning proposed by Illeris (2009). Secondly any possible differences between the participants have been ignored. Therefore, to test whether the items that had been constructed did measure the different dimensions of learning, a principal component analysis (PCA) was carried out. In Chapter 4, the purpose of the PCA will be considered and the findings from the PCA presented. Once the PCA findings have been justified, they will be used to establish if and how groups of participants valued different aspects of the learning process. These analyses will be presented in Chapters 5 and 6.

Chapter 4. Findings: The Principal Component Analysis.

4.1. Justifying the PCA.

Chapter 2 described the development of the blueprint to design the questionnaire (Rust and Golombok, 2009). Through this procedure, twenty one cells were generated to cover the three content areas (the content, emotional and social dimensions of learning) and the seven manifestations. It was noted in Section 3.5 that thus far there was an assumption that the items designed successfully captured the value expressed by the participants towards the manifestations and content areas in the blueprint that had been created. Yet as the cells presented the latent variables that I as the researcher was interested in exploring but could not directly pose to the participants, any assumptions could be erroneous. Kline (1999) suggests that when psychological questionnaires have been administered, the process of factor analysis is necessary because it ascertains whether what is being assessed has construct validity. Factor analysis 'simplifies complex sets of data' (Kline, 1994, p. 3) and generates constructs which are 'a condensed statement of the relationship between a set of variables' (Kline, 1994, p. 5). By giving each item a factor loading, it allows for the latent variables to become manifest as factors and it confirms whether the researcher is exploring what they think they are exploring. Field (2009) points out that 'there are several methods for unearthing factors' (p. 636). In this research the PCA was used to develop and perhaps clarify the latent variables in the blueprint. This method was chosen because it is 'a psychometrically sound procedure' that establishes the common variance between the items in the questionnaire (Field, 2009, p. 638). It is 'the solution of choice' for the researcher who is primarily interested in reducing a large number of variables down to a smaller number of components (Tabachnick and Fidell, 2007, p. 635).

4.2. Establishing the components.

I will now outline how the components of the PCA were established. Principal component analysis is initially constructed by examining which items within a questionnaire correlate with each other. Therefore a correlation matrix of the statement

scores with other statement (variable) scores was generated using the Pearson correlation coefficient. Thirteen variables with correlations of less value than 0.3 were removed because the relationship between such items and other items was tenuous (These are shown in Appendix 8). Such variables would detract from the principal components (Field, 2009). Forty five statements remained that could be used in the PCA. Bartlett's test of sphericity was highly significant ($p < .001$), indicating that within the correlation matrix there were some relationships between the variables. The reliability of PCA is dependent upon the sample size and can be tested using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. In this research the KMO was 0.843, suggesting that the pattern of correlations was compact and so PCA would yield distinct and reliable components (Field, 2009, p. 647). Furthermore all KMO values for individual items were greater than .6.

Initially, to extract the components from the variables Kaiser's recommendation of eigenvalues greater than one was used. Eigenvalues represent the total amount of variance for the factors. They are the weight of each variable on the variate. The larger the eigenvalue, the more variance is explained by the factor. Stevens (2002) suggests that for a sample size of more than 300, factor loadings greater than 0.298 should be considered. Whilst mindful of this recommendation, for ease of interpretation in the first analysis, factor loadings with an absolute value greater than 0.4 were interpreted (Field, 2009). Thirteen components were generated from the PCA using these criteria (Appendix 9). This represented 62.09% of the variance. To assist understanding of which variables related to which factors (factor loadings), the extracted components were rotated. Oblique rotation was used because the research investigated the different dimensions of one overarching theme, that of learning and theoretically it was expected that the components would correlate.

To understand the relationship between the 13 components and the content and manifestation areas of the questionnaire, the variables from the components were mapped on to the blueprint that had been used in the questionnaire construction. This is presented in Figure 4.1. Even so, the 13 components did not match with the 21 cells. The manifestations that had been designed in the blueprint had not emerged through the

PCA. Eight cells in the blueprint now seemed to have little meaning because they either had none or just one item mapped on to them. Expected latent variables were not evidenced. Moreover, ten cells had statements from different components mapped onto them, indicating that what was being measured might not have been what was presumed.

Figure 4.1. The items from the 13 components mapped on to the blueprint.

		Content Areas		
		The Content Dimension of Learning.	**The Emotional Dimension of Learning.**	**The Social Dimension of Learning.**
Manifestation Areas	**The 'learning careers' of the students thus far.**	Cell 1 St.*54 C.** 10 St.16 C. 13	Cell 2 St.3 C.10	Cell 3 St.33 C. 9
	Learning connected with the socio-economic context.	Cell 4 St.45 C. 8 St.57 C. 8	Cell 5 St.42 C. 7	Cell 6 St.13 C. 4
	The ideas of learning self/self identity as learners: Incremental or entity selves.	Cell 7 St.48 C. 3 St.27 C. 2	Cell 8 St.39 C. 1 St.3 C. 1	Cell 9 St.32 C. 6 St.28 C. 6 St.24 C. 5
	The behaviours for learning.	Cell 10 St.49 C. 3 St.20 C. 2 St.58 C. 2	Cell 11 St.22 C. 3 St.25 C. 7	Cell 12 St.18 C. 9 St.44 C. 6
	The enjoyment/satisfaction/ or lack of satisfaction/ enjoyment in learning (learning for self).	Cell 13 St.43 C. 1 St.29 C. 4	Cell 14 St.53 C. 1 St.35 C. 1 St.8 C. 1	Cell 15 St.2 C. 1 St.4 C. 5
	The possibility of positive future changes through learning – learning careers from here on in.	Cell 16 St.52 C. 12	Cell 17 St.30 C. 4	Cell 18 St.15 C. 12 St.6 C. 2 St.17 C. 5
	Meta-cognition.	Cell 19 St.21 C. 3 St.12 C. 3 St.51 C. 2 St.5 C. 2 St.7 C. 2 St.12. C. 13	Cell 20	Cell 21 St.56 C. 11
Colour Key.	Component 1 = red. Component 2 = Blue. Component 3 = bright green. Component 4 = maroon. Component 5 = orange. Component 6 = olive green. Component 7 = brown. Component 8 = pink Component 9 = turquoise. Component 10 = purple. Component 11 grey. Component 12 = dark blue. Component 13 = lilac. Note: *St. stands for statement. ** C. stands for component.			

Yet some patterns were noted. All of the loadings from component eight were represented in cell four. These were items 45 and 57 and measured the relationship between the content dimension and learning connected with the socio economic context. Two of the three items from component six were represented in cell nine. This was designed to measure the relationship between learning identity and the social dimension. The third item for component six fell into cell 12. This was also concerned with the

social dimension of learning. Whilst not specific to cells, two manifestations were represented by two components. Component 10 had two items that were placed in two of the three cells that represented the manifestation of the learning careers thus far and component 12 had two items that were placed into two of the three cells that represented the manifestation of views with regard to the possibility of positive change.

In summary, the first PCA allowed for four latent variables to become explicit. These were tentatively named the socio-economic context (component eight), the emotional learning self (component six), the learning careers thus far (component 10) and learning careers of the future (component 12).

The naming of these manifestation variables was made possible because of the small number of loadings that comprised the components. Whilst allowing for categorisation, the PCA also indicated that any further analysis must be undertaken with caution. The above variables did not represent the most powerful factors to be generated from the PCA. After all, component one had seven items, five of which were mapped onto cells in the emotional dimension of learning. Item 39 and item three were mapped on to cell eight, representing the learning self and items eight, 35 and 53 mapped on to cell 14, satisfaction in learning. Six of the seven items from component two were placed in cells for the content dimension of learning. Four of five items for component three also matched with the content dimension of learning. Whilst no pattern emerged for component four, all items for component five were in the social dimension of learning.

In other words, fourteen out of 16 loadings in components two, three, eight and 13 represented the content dimension of learning. Components one and seven represented the emotional dimension of learning but component one also included two statements from the enjoyment manifestation. All the factor loadings in components five, six, nine and 11 represented the social dimension. As so many of the items for the different components fell into similar dimensions, it was evident that the use of 13 factors was leading to unnecessary splitting. It seemed appropriate to reduce the number of components created by the PCA. Kline (1994) suggests that Cattell's Scree test 'is just about the best solution to selecting the correct number of factors' (p. 75). The scree plot

is shown in Figure 4.2. An examination of the scree plot quickly ruled out the use of 13 components but the actual point of inflexion was ambiguous, lying between eigenvalue four and eigenvalue six. However, returning to the eigenvalue scores, it was noted that four components had values greater than 2, explaining 36.18% of the variance, and so this was the number of components that were retained in the final analysis. Table 4.1 shows the factor loadings after rotation. To ensure that many variables were represented in the factors, Steven's (2002) recommendation of factor loadings greater than 0.298 was now adhered to. When items generated factor loadings for more than one component, the greater factor loading was recognised.

Figure 4.2. The scree plot of the eigenvalues.

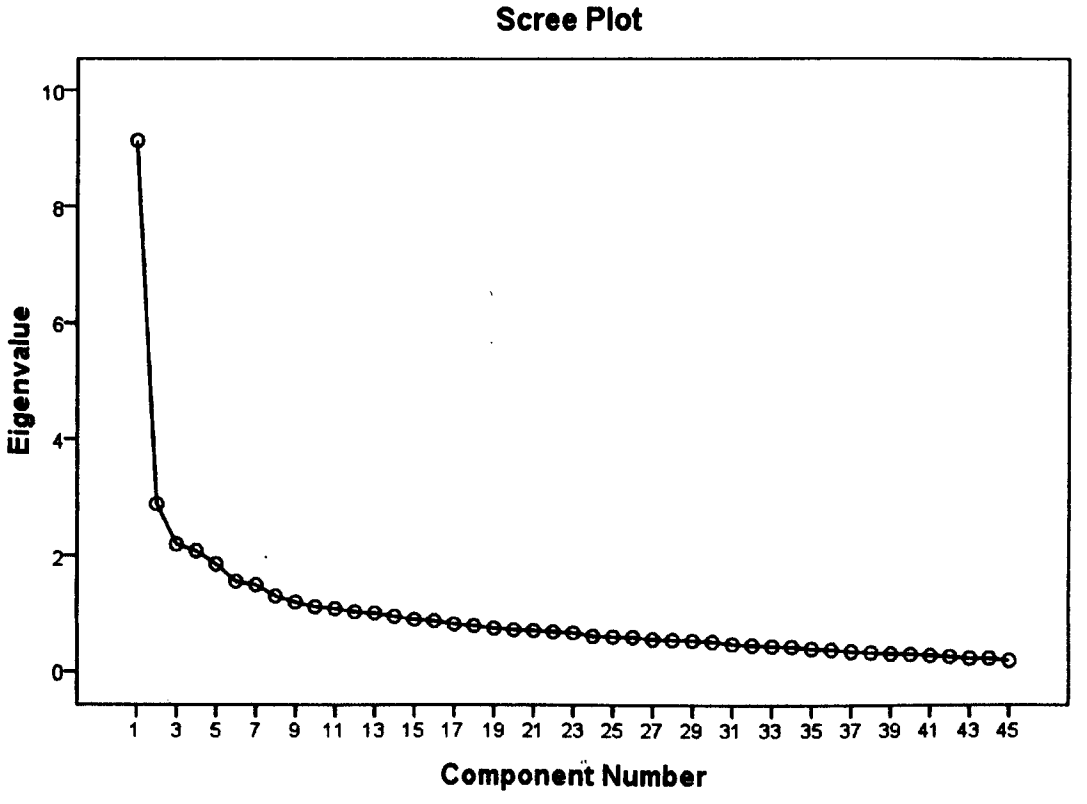


Table 4.1. The factor loadings for the principal component analysis to establish four components.

Rotated Factor Loadings.				
Item.	Component 1	Component 2	Component 3	Component 4
St.35. My heart isn't in my course at college, so I find it hard to learn. (R). Cell 14	.716			
St.53. I don't really want to be doing the course/s I am doing so staying motivated is difficult. (R). Cell 14	.709			
St.43. I am not enjoying what I am learning at college right now. (R). Cell 13	.630			
St.39. What I am learning now is difficult; I must be emotionally strong to manage it. Cell 8	-.629	*.299*		
St.25. I often get frustrated in class and this stops me from concentrating. (R). Cell 11	.599			
St.3. I find college learning stressful, I don't want to do anymore than I have to. (R). Cell 8	.575			
St.42. I find thinking about my future stressful and it has a bad effect on my learning. (R). Cell 5	.573			
St.15. I can't wait to leave college so that I no longer have to ask or answer any questions. (R). Cell 18	.516			
St.8. The course/s I am on is so interesting, I am very happy to study for it. Cell 14	.503			
St.38. I am not a good student, I am always behind with my assignments. (R). Cell 11	.487			
St.10. I have a strong drive to do best in all my studies.	.482	*.356*		
St.47. I am motivated to do well, so I try to work solidly all the way through the term. Cell 11	.436	*.364*		
St.1. I am motivated to be the best that I can be, just for myself. Cell 17	.404			
St.51. Soon after a lesson, I re-read my notes to make sure I understand them. Cell 19		.738		
St.20. Soon after a lesson, I think over what we have learned to make sure I understand it. Cell 10		.709		
St.5. I memorise key words, to remind me of important concepts in lessons. Cell 19		.664		
St.27. I test myself on important topics until I understand them completely. Cell 7		.584		
St.16. When I was in Year 10 and/or 11, I learned things by going over and over them until I knew them by heart. Cell 1		.545		
St.6. To be a good learner in the future, I will talk over new information with friends. Cell 18		.500		*.313*
St.13. Even though the times are tough, I think I will be able to get a good job because I show that I am willing to learn with others. Cell 6		.393		
St.23. When I was doing my GCSEs at school, I was very motivated to get good grades. Cell 2		.384		
St.58. When I get an assignment back, I go over it carefully correcting all the errors and trying to understand where I made mistakes. Cell 10		.382		
St.7. I tend to learn what is set; I usually don't do anything extra. (R). Cell 19		.331		
St.22. I spend a lot of time finding out about new topics. Cell 11		.314		
St.49. I try to make connections between what I have just learned and what I already know. Cell 10			.696	
St.57. If I want to get a good job or go to University, I'm going to have to show that I have a lot of knowledge in my head. Cell 4			.695	
St.48. There is so much information to understand that I think learning is something that I will do throughout my life. Cell 7			.640	
St.45. I think that employers value good qualification grades that show them what I know. Cell 4			.588	*-.321*
St.56. I know that being asked questions in class is good for my learning. Cell 21			522	
St.12. I try to relate what I have learned in lessons to something I already know. Cell 19			.522	

St.52. I think when I leave here, I will build on the knowledge I have learned with new knowledge. Cell 16			.390	
St.29. I find that learning can give me a deep sense of personal satisfaction. Cell 13			.365	
St.28. I don't like to talk about what I have learned. (R). Cell 9			.364	.321
St.24. I like to learn with other people. Cell 9				.814
St.4. I find learning with others in college a hassle. (R). Cell 15				.657
St.18. When I want to learn something, I seek out friends to study with. Cell 12				.571
St.41. In class, I feel I am part of something meaningful when I am discussing subjects with other people. Cell 15				.478
St.33. When I was in Year 10 and/or 11, I found learning to be best when I had someone to talk over the learning with. Cell 3				.396
St.17. I do not look forward to having to learn with others in the future. (R). Cell 18				.395
St.44. I always ask questions if I need to understand something. Cell 12				.376
St.2. The course/s I am doing now has made me realise how enjoyable it is to learn with others. Cell 15				.332
Eigenvalues	9.13	2.88	2.20	2.08
% of variance	20.28	6.39	4.88	4.63
Cronbach's Alpha (α)	.8	.77	.75	.7

Note, values <.298 have been suppressed.

The four components were once again mapped on to the blueprint used for the design of the questionnaire. This is shown in Figure 4.3. From the mapping it can be seen that 10 statements from component one mapped onto the column for the emotional dimension of learning. A further three statements from component one fell into different dimensions. However, close analysis of the items indicated that they were connected to the emotional aspect of learning. Statement 10 was the emotive statement 'I have a strong drive to do well in my studies' and statement 43 was 'I am not enjoying what I am learning at college right now' (R). Statement 15 was 'I can't wait to leave college so that I no longer have to ask or answer any questions' (R). Although this had been designed as a statement to elicit the social dimension of learning, it can be seen as fitting the emotional dimension. Therefore component one was labelled the **emotional dimension of learning.**

Figure 4.3 also shows that eight statements for component four were found in the column from the blueprint for the social dimension of learning. No statements from component four fell outside this column and so the component was labelled the **social dimension of learning.**

Figure 4.3. The four components mapped on to the blueprint.

	Content Areas			
		The Content Dimension of Learning.	**The Emotional Dimension of Learning.**	**The Social Dimension of Learning.**
Manifestation Areas	**The 'learning careers' of the students thus far.**	Cell 1 St.*16. C.** 2	Cell 2 St.23 C. 2	Cell 3 St.33 C. 4
	Learning connected with the socio-economic context.	Cell 4 St.45 C. 3 St.57 C. 3	Cell 5 St.42 C. 1	Cell 6 St.13 C. 2
	The ideas of learning self/self identity as learners: Incremental or entity selves.	Cell 7 St.10 C. 1 St.48 C. 3 St. 27 C. 2	Cell 8 St.3 C. 1 St.39 C. 1	Cell 9 St.24 C. 4 St.28 C. 3
	The behaviours for learning.	Cell 10 St.20 C. 2 St.58 C. 2 St.49 C. 3	Cell 11 St.25 C. 1 St.38 C. 1 St.47 C. 1 St.22 C. 2	Cell 12 St.18 C. 4 St.44 C. 4
	The enjoyment/satisfaction/ or lack of satisfaction/ enjoyment in learning (learning for self).	Cell 13 St.29 C. 3 St.43 C. 1	Cell 14 St.8 C. 1 St.35 C. 1 St.53 C. 1	Cell 15 St.2 C. 4 St.4 C. 4 St.41 C. 4
	The possibility of positive future changes through learning – learning careers from here on in.	Cell 16 St.52 C. 3	Cell 17 St. 1. C. 1	Cell 18 St.15 C. 1 St.17 C. 4 St.6 C. 2
	Meta-cognition.	Cell 19 St.5 C. 2 St.7 C. 2 St.51 C. 2 St.12 C. 3	Cell 20	Cell 21 St.56 C. 3
Colour Key.	Component 1 = red. Component 2 = blue. Component 3 = green. Component 4 = pink Note: *St. stands for statement. **C. stands for component.			

Components two and three were harder to define. There were seven statements for component two placed in the content dimension column on the blueprint with two from the emotional dimension and two from the social dimension. At the same time, component three had seven statements placed in the content dimension of learning column on the blueprint with two statements from the social dimension of learning column. The statements from the social dimension column were ''I don't like to talk about what I have learned' (R) and 'I know that being asked questions in class is good for my learning'. Although these were intended to measure the social dimension, it can be seen that they do relate to the accumulation of knowledge. Therefore, it was initially felt that component three represented the content dimension. However, it was evident from looking at the statements for component two that they were also content based. Yet there was a different theme running through the items in component two. Nine of

the twelve statements in component two were related to strategies used for acquiring knowledge and information; meta-cognitive strategies. Four items in component three focused on how valuable knowledge and information was to the learners, three of these had high factor loadings for that component. Hence component two was given the nomenclature **meta-learning,** reflecting the definition provided by the European Parliament Education Council (2006) and component three was given the appellation of the **importance of knowledge,** thereby dividing the content dimension of learning that was constructed in the blueprint. This is noteworthy because whilst the PCA did reflect the tension field of learning proposed by Illeris (2007), the content dimension was more nuanced than he would suggest.

In summary, the second PCA carried out in this research generated four components or four elements of learning that were valued by the participants. These have been named as the **social dimension of learning**, the **emotional dimension of learning, meta-learning** and the **importance of knowledge.** These overarching components enveloped the variables that were made explicit from the first PCA and dispersed the items that had been included in the first labelled components. However, the items that represented the socio-economic context remained in the knowledge dimension.

Once these components had been extracted from the data it was appropriate to check the reliability of the principal component analysis. This was done using Cronbach's Alpha. Table 4.1 shows that the results of Cronbach's Alpha ranged from 0.8 to 0.7. The components with the smaller number of items produced the smaller Alphas, but they were all in the region of 0.7 to 0.8. This is indicative of satisfactory reliability (Kline, 1999; Field, 2009). The construction of four components from the PCA could be considered robust.

Finally, the mean scores for the combined items in each component were established. It can be seen from Table 4.2 that just as with the initial dimensions explored in Chapter 3, the mean scores for each of the components generated were always greater than two, thereby indicating that overall the participants expressed positive regard in relation to the components.

Table 4.2. The mean scores for the items categorised into four dimensions by the PCA.

The components generated by the PCA.	Mean score for all the items.	The standard deviation for all the items.	The Range for all the items.	Number of items.
The emotional dimension of learning	2.80	.24	.75	13
The meta-learning dimension.	2.71	.25	.68	11
The importance of knowledge.	3.08	.13	.37	9
The social dimension of learning.	2.88	.18	.62	8

Mirroring the findings of Chapter 3, it was evident that the mean score generated for the combined items measuring the importance of knowledge ($M = 3.08$, *SD*, .13) was greater than the mean score for all the items measuring the social dimension for learning ($M = 2.88$, *SD*, .18) which was in turn greater than the mean score for all the responses measuring the emotional dimension of learning ($M = 2.80$, *SD*, .24). Interestingly, the mean for the social dimension of learning was exactly the same as it was before the PCA was carried out. However, the mean score for the meta-learning component was lower than the other three components.

4.3. Summary of Chapter 4.

In this chapter, the justification for the PCA has been provided. The procedure required to establish the components has been outlined and the statistical judgements made have been defended. The naming of the four components that have been created has been explained and the mean scores for the combined items in the components have been presented. It is now appropriate to use the four components to analyse what value was placed on them by groups of participants. This shall be done in Chapter 5 using both descriptive and inferential statistics.

Chapter 5. Findings: Using the four PCA components to compare groups.

Chapter 5 explores how different groups of participants within the post-compulsory sector gave different emphases to the four dimensions of learning established by the PCA outlined above. Although the mean scores for all of the original items were greater than two, because the four components were generated from a PCA, the mean for each component for the entire sample was zero. The means and standard deviations for different groups of participants were compared to see how far they deviated, either positively or negatively, away from the zero mean of the total. The first difference between groups to be examined is whether the participants were at sixth form college or at a sixth form centre attached to a school, the second difference to be explored is the specific site that the participants attended, the third is the courses that the participants were following, the fourth is the GCSE point score of the participants.

5.1. Sixth form centre attached to a school compared with sixth form college.

The means and standard deviations were established for each component of learning for all of the participants attending the two sixth form colleges (college) and all of those attending the two sixth form centres attached to a school (centre). Table 5.1 shows these descriptive statistics. The sample size for each group is recorded on the table (N). It is of note and perhaps striking that the mean scores for each dimension of learning for those attending the sixth form centres was always negative whereas for those who were attending the colleges it was always positive. For instance, the mean score for the emotional dimension of learning for participants attending the centres was -.19 (*SD*, 1.07). In contrast it was .16 (*SD*, .91) for the college attendees. These differences suggest that the participants at the college expressed greater value for all the dimensions of learning compared with the sixth form centre participants. To illuminate such differences further they were explored using inferential statistics.

Table 5.1. The mean scores and standard deviations of the four dimensions of learning for participants either at centre or college.

	Setting	The Mean	The standard deviation.	N
The emotional dimension of learning.	Centre	-.19*	1.07	121
	College	.16	.91	142
The social dimension of learning.	Centre	-.26	1.06	121
	College	.22	.89	142
The importance of knowledge.	Centre	-.09	1.06	121
	College	.08	.94	142
Meta-learning.	Centre	-.27	1.00	121
	College	.23	.95	142
	Total	.00	1.00	263

*Note: all means and standard deviations are presented to two decimal places.

Firstly, Multivariate analysis of variance (MANOVA) was used to explore the differences between the participants at the colleges and the centres and the value that was placed by the participants on the emotional dimension of learning, the social dimension of learning, meta-learning and the importance of knowledge. MANOVA was chosen for four reasons. It was appropriate because the outcome of the PCA from the questionnaire was four different components, all of which could be thought of as dependent variables (Salkind, 2011). Secondly, MANOVA takes account of the relationships between the different dependent variables. Thirdly, MANOVA reduces the possibility of making a Type 1 error where effect is believed to occur but has not. Fourthly and of paramount importance, multivariate procedures provide insights into relationships that 'closely resemble the complexity of the "real" world' (Tabachnick and Fidell, 2007, p. 5). The chosen test statistic was Pillai's trace because it is powerful when groups differ amongst different variates (Field, 2009). Using Pillai's trace, there was a significant difference between the site groups and the dimensions of learning, $V = .098$, $F(4, 258) = 6.99$, $p < .05$, $\eta^2 = .09$.

Although the MANOVA indicated that there were statistically significant differences between the sixth form centre group of participants and the sixth form college group of participants and their value for the four dimensions of learning, further investigation was required to establish where the differences lay. For this a one way independent analysis of variance (ANOVA) was carried out. The ANOVA was used because it tests the hypothesis that all group means are equal. It also reduces the chance of making a

Type 1 error. The ANOVA demonstrated that there was a significant difference between the two groups and the emotional dimension of learning, $F(1, 261) = 8.20, p < .05, \eta^2 = .03$, there was a significant difference between the two groups and the value given to meta-learning, $F(1, 261) = 17.22, p < .05, \eta^2 = .06$ and there was a significant difference between the two groups and the mean scores for the social dimension of learning $F(1, 261) = 16.43, p < .05, \eta^2 = .06$. There was no significant difference for the importance of knowledge dimension of learning $F(1, 261) = 1.82, p > .05$. Indeed in this case both means were very close to the overall mean of zero.

Where significant differences were found between the different participants, to show the proportion of variance that is related to the groups, the effect size of eta squared (η^2) has been reported. Whereas the effect size was small for the emotional dimension of learning, there was a medium effect for both meta-learning and the social dimension of learning.

Therefore, it can be suggested tentatively that institutional context is a variable of note when considering the values that young people have for different dimensions of learning. However, it would be erroneous to assume that there is any causal dynamic to the emergence of such a difference, indeed this cannot be asserted with real world research. Nevertheless, it is feasible that site differences are influential. In the next part of the chapter this assertion will be explored further by considering differences between the four sites.

5.2. Site compared with Site.

The means and standard deviations were established for each dimension for the participants at the different sites, SFA, SFB, SFC and SFD. Table 5.2 shows these descriptive statistics. For each site N is smaller than the data collected from the sample because only those who had responded to all the items within the components were included.

There are some notable similarities and differences between the mean scores on the different dimensions of learning and the settings investigated. Participants at SFA consistently generated lower mean values for the four dimensions compared with other sites. It can be seen that the mean for the value placed on the emotional dimension of learning at centre SFA was -.41 (*SD*, 1.15). In contrast the mean for the value placed on the emotional dimension of learning at college SFD was .26 (*SD*, .86). Furthermore, the means for the value placed on this same dimension generated for SFB and SFC were similar at .07 (*SD*, .91) and .07 (*SD*, .95) respectively. The mean for the value placed on the social dimension of learning at centre SFA was -.60 (*SD*, 1.02) but it was positive for SFB, SFC and SFD. The mean for the value placed on meta-learning at centre SFA was -.44 (*SD*, 1.06). The mean was also negative for SFB but it was considerably more positive for SFD at .42 (*SD*, .98). SFB had the highest mean (*M* = .43, *SD*, .89) for the importance of knowledge. Again, to illuminate the differences further, it was appropriate to subject the mean differences between the sites to analysis using inferential statistics.

Table 5.2. The mean scores and standard deviations of the four dimensions of learning for participants at each site.

	Site	The Mean	The standard deviation.	N
The emotional dimension of learning.	SFA	-.41*	1.15	65
	SFB	.07	.91	56
	SFC	.07	.95	75
	SFD	.26	.86	67
The social dimension of learning.	SFA	-.60	1.02	65
	SFB	.12	.98	56
	SFC	.22	.88	75
	SFD	.23	.91	67
The importance of knowledge.	SFA	-.53	.99	65
	SFB	.43	.89	56
	SFC	-.09	.99	75
	SFD	.26	.86	67
Meta-learning.	SFA	-.44	1.06	65
	SFB	-.09	.88	56
	SFC	.06	.89	75
	SFD	.42	.98	67
	Total	.00	1.00	263

*Note: all means and standard deviations are presented to two decimal places.

Firstly, a MANOVA was used to explore the differences between the four sites and the value that was placed by the participants on the four components that had been

generated. Using Pillai's trace, there was a significant difference between the site groups and the dimensions of learning, $V = .259$, $F(12, 774) = 6.1$, $p < .05$, $\eta^2 = .09$.

A between subjects ANOVA confirmed that there was a statistically significant difference between the means for each group and each of the dimensions of learning. For the emotional dimension of learning, the ANOVA was significant, $F(3, 259) = 5.58$, $p < .05$, $\eta^2 = .06$. The ANOVA was statistically significant for the meta-learning dimension, $F(3, 259) = 9.07$, $p < .05$, $\eta^2 = .10$. It was significant for the importance of knowledge dimension, $F(3, 259) = 12.89$, $p < .05$, $\eta^2 = .13$ and it was significant for the social dimension of learning $F(3, 259) = 11.62$, $p < .05$, $\eta^2 = .12$.

The ANOVA was followed up with post hoc tests. The Box test of Equality of Covariance matrices and the Levene's test of equality of error variances indicated that the assumption of homogeneity of variance had been met. Therefore the Tukey procedure was employed to explore the differences between the settings further. This procedure was chosen because it 'has good power and tight control of the Type 1 error rate' (Field, 2009, p. 374). For rigour, the Games-Howell procedure was also adopted. The results from the Games-Howell mirrored closely those of the Tukey and it is the latter that are reported here. Table 5.3 shows the findings from the Tukey procedure for each of the dimensions of learning.

Table 5.3. Comparing the four sites using the Tukey procedure.

Site	compared with	Mean difference	Standard Error	Significance
		The Emotional Dimension of Learning.		
SFA	SFB	-.47	.18	.04*
	SFC	-.48	.17	.02*
	SFD	-.67	.17	.00*
SFB	SFA	.47	.18	.04*
	SFC	-.01	.17	1.00
	SFD	-.19	.18	.69
SFC	SFA	.48	.17	.02*
	SFB	.01	.17	1.00
	SFD	-.18	.16	.67
SFD	SFA	.67	.17	.00*
	SFB	.19	.17	.69
	SFC	.18	.16	.67
		The Social Dimension of Learning.		
SFA	SFB	-.72	.17	.00*
	SFC	-.81	.16	.00*
	SFD	-.83	.16	.00*
SFB	SFA	.72	.17	.00*
	SFC	-.09	.17	.94
	SFD	-.11	.17	.92
SFC	SFA	.81	.16	.00*
	SFB	.09	.17	.94

	SFD	-.01	.16	1.00
SFD	SFA	.83	.16	.00*
	SFB	.11	.17	.92
	SFC	.01	.16	1.00
		The Importance of Knowledge		
SFA	SFB	-.96	.17	.00*
	SFC	-.44	.16	.03*
	SFD	-.80	.16	.00*
SFB	SFA	.96	.17	.00*
	SFC	.52	.17	.01*
	SFD	.16	.17	.78
SFC	SFA	.44	.16	.03*
	SFB	-.52	.17	.01*
	SFD	-.36	.16	.11
SFD	SFA	.80	.16	.00*
	SFB	-.16	.17	.78
	SFC	.36	.16	.11
		Meta-learning.		
SFA	SFB	-.37	.17	.14
	SFC	-.50	.16	.01*
	SFD	-.86	.17	.00*
SFB	SFA	.37	.17	.14
	SFC	-.13	.17	.87
	SFD	-.49	.17	.03*
SFC	SFA	.50	.16	.01*
	SFB	.13	.17	.87
	SFD	-.36	.16	.12
SFD	SFA	.86	.17	.00*
	SFB	.49	.17	.03*
	SFC	.36	.16	.12

*The mean difference is significant at the 0.05 level.

The notable differences between the mean scores between SFA and SFD for the value placed on the emotional dimension of learning have already been highlighted. Table 5.3 demonstrates that these differences were statistically significantly different. Indeed, the scores for this dimension generated by SFA when compared with SFB, SFC and SFD were all significantly different but there were no significant differences between sites SFB, SFC or SFD.

The Tukey procedure also indicated that the value placed on the social dimension of learning was not significantly different between settings SFB, SFC and SFD. However, the mean from centre SFA was negative (M = -.60, *SD,* 1.02) and this was found to be statistically significantly different from SFB, SFC and SFD, (M =.12 (*SD*, .98), M = .21 (*SD*, .88), M = .23 (*SD*, .91) respectively).

Moreover, Table 5.3 shows that there were statistically significant differences between SFA and SFB, SFA and SFC, SFA and SFD and SFB and SFC with regard to the value placed on the importance of knowledge. For centre SFA the mean score was negative

(M = -.53 SD, .99). Whilst this was also the case for SFC (M = -.09, SD, .99) it was still significantly different to SFA. The mean score was positive for SFB (M = .43, SD, .89) and also for SFD (M = .26, SD, .85).

Finally in this section, it can be seen that there were three statistically significant differences between the sites and their value for meta-learning. Firstly SFA was statistically significant from SFC and SFD and secondly, SFB was significantly different from SFD. The mean score for SFA was -.44 (SD, 1.06) and for SFB it was -.09 (SD, .88). These negative scores contrast with the positive scores at SFC (M = .06, SD, .89) and at SFD (M = .42, SD, .98).

It is clear then that not only are there differences between the aspects of learning that are reported as valued by the participants at the sixth form colleges compared with those at the sixth form centres, these differences permeate through to the individual settings. The participants at SFA stand apart from the remaining three sites with regard to the lower scores they reported for the emotional dimension of learning, the social dimension of learning and the importance of knowledge. Whilst they do not differ from the participants at SFB with regard to the value given to meta-learning, both SFA and SFB differ significantly from the college setting of SFD. It is of note that the Tukey procedure presented no significant differences between the two sixth form colleges, reiterating and reinforcing the findings from Section 5.1 and thereby indicating that the sixth form college context might be integral to the values that participants report. At the same time, there was only one significant difference between the sixth form centre SFB and the college SFC and that was with regard to the importance of knowledge, with SFB reporting a higher mean than SFC. SFB reported the greatest value for the importance of knowledge. In Section 2.4 the character of the participants in each institution was outlined. Moreover, in Section 1.4 it was suggested that the values for learning held by the participants can be shaped by the assessment strategies employed. AS courses emphasise the need to learn content for examinations. All the participants from SFA were studying AS courses and they had the highest mean for point scores at GCSE. Yet the participants at SFA indicated the least value for the importance of knowledge. It is

time therefore to move away from settings to compare differences between participants following different programmes and then investigate within site variations.

5.3. Participants following exam based programmes compared with those following portfolio based programmes.

It was outlined in Chapter 1 that participants following BTEC programmes were assessed through coursework and AS, A2 and GCSE participants were working towards exams. Given the discourse about the effect of assessment strategy on learning approaches (Biggs, 1998; Black and Wiliam, 1998) it was felt appropriate to compare the value that was given to the four components of learning by different participants depending on whether they were following exam based programmes or coursework led programmes. However, it was also noted in Chapter 2 that many participants stated that they were enrolled on a combination of courses. They could be studying for a BTEC and taking GCSE maths, or they might be doing an AS to complement their A2s. For the comparison here, the participants were categorised into two groups, exam or portfolio, depending on what they had reported to be their dominant programme of study. If a participant was studying for a BTEC National Diploma and one AS level, the BTEC would be dominant because it has more learning hours attached to it. Table 5.4 shows the mean scores and standard deviations for the four components of learning. It can be seen that the mean value placed on the emotional dimension of learning by participants pursuing exam based programmes was -.11 (*SD,* 1.04). In contrast, the mean value placed by participants following portfolio based programmes was .21 (*SD,* .90). The greatest difference was for the social dimension of learning, where the participants enrolled on exam based programmes generated a much lower score (M = -.15, *SD,* 1.00) than those enrolled on portfolio based programmes (M = .34, *SD,* .92).

A one way ANOVA indicated that these mean value differences were statistically significant for the emotional dimension of learning, $F(2, 260) = 3.66, p < .05, \eta^2 = .03$, the social dimension of learning, $F(2, 260) = 6.77, p < .05, \eta^2 = .05$, and the value placed on meta-learning, $F(2, 260) = 6.54, p < .05, \eta^2 = .05$. The effect size was considerable. The value placed on the importance of knowledge was not significantly

different, $F(2, 260) = 1.039, p > .05$. Although these differences are worthy of note, it must be remembered that firstly, the number of participants (N = 175) for the exam based programmes was much higher than for the portfolio based programmes (N = 79) and secondly, the comparison between these participants conflated students on several different programmes at different levels of attainment. In Section 5.4, the analysis will focus more specifically on the values generated by participants on different programmes.

Table 5.4. The mean scores and standard deviations of the four dimensions of learning for participants following programmes with different assessment procedures.

	Assessment strategy	The Mean	The standard deviation.	N
The emotional dimension of learning.	Exam	-.11	1.04	175
	Portfolio	.21	.90	79
The social dimension of learning.	Exam	-.15	1.00	175
	Portfolio	.34	.92	79
The importance of knowledge.	Exam	-.04	1.06	175
	Portfolio	.04	.84	79
Meta-learning.	Exam	-.13	.98	175
	Portfolio	.19	.97	79
	Total			154

*Note: all means and standard deviations are presented to two decimal places.

5.4. AS participants compared with BTEC participants (and other combinations).

To compare differences between participants following different programmes, it is important to remember that the categories were dependent on self report. Again the participants were grouped according to what they had reported to be their dominant programme of study. Only four participants reported doing just GCSEs. There were ten participants whose main programme was BTEC Level One and 26 participants whose main programme was BTEC Level Two. Eighty seven percent of the participants were pursuing Level Three programmes. Table 5.5 shows the mean score for the value placed on the different dimensions of learning for each of the groups of participants following different courses.

Table 5.5. The means and standard deviations for the scores on the dimensions of learning from participants studying different courses.

Programme of Study	Mean	Standard Deviation	N
The Emotional Dimension of Learning.			
AS levels	-.09	1.05	160
BTEC Level One	.54	.67	7
BTEC Level Two	.55	.57	17
BTEC Level Three	.08	.96	67
GCSEs	-1.19	1.06	4
A2s	.03	.50	8
The Social Dimension of Learning.			
AS levels	-.20	1.00	160
BTEC Level One	.80	.54	7
BTEC Level Two	.37	.49	17
BTEC Level Three	.38	1.00	67
GCSEs	-.23	1.72	4
A2s	-.06	.55	8
The Importance of Knowledge			
AS levels	-.02	1.07	160
BTEC Level One	-.23	.59	7
BTEC Level Two	.17	.84	17
BTEC Level Three	.05	.85	67
GCSEs	-.00	1.21	4
A2s .	-.19	1.42	8
Meta-learning.			
AS levels	-.16	1.00	160
BTEC Level One	.29	.81	7
BTEC Level Two	.42	.96	17
BTEC Level Three	.20	1.00	67
GCSEs	.44	.87	4
A2s	.12	.71	8
Total			263*

*Note: the total is less than the sample size because of the PCA.

It has already been stated that because the four dimensions were generated from a principal component analysis, the mean for each dimension for the entire sample was zero. It is evident from Table 5.5 that the mean scores generated by the GCSE participants were below zero for the emotional and social dimensions of learning (M = -1.19, *SD,* 1.06 and M = -.23, *SD,* 1.72, respectively) and for the A2 participants they were negative for the social dimension of learning (M = -.06, *SD,* .55) and the importance of knowledge (M = -.19, *SD,* 1.42). However, given the small number of participants following just GCSEs and A2s, these results will not be analysed further. For participants following BTEC Level One courses the mean scores were positive for the emotional (M = .54, *SD,* .67) social (M = .80, *SD, .54)* and meta-learning dimensions (M = .29, *SD,* .81) but negative for the importance of knowledge (M = -.23, *SD,* .59). Again however, the number of participants was very small and caution is warranted.

The participants following BTEC Level Two programmes generated mean scores that were positive for all the dimensions of learning as did the BTEC Level Three participants. For the latter group, the scores for the emotional dimension and the importance of knowledge were close to the mean but the mean score for the social dimension of learning was notable at .38 (*SD,* 1.00) as was the mean score for the meta-learning component ($M = .20$, *SD,* 1.00). Interestingly, the scores generated by the AS participants were negative for all the dimensions of learning. This is especially curious as the AS participants formed the largest group ($N = 160$) and therefore had the greatest input on the construction of the PCA on which these differences are based. However, the AS participants scores were close to the mean for the emotional dimension of learning ($M = -.09$, *SD,* 1.05) and the importance of knowledge ($M = -.02$, *SD,* 1.07) and there was a large standard deviation indicating a wide variation from the means. Even so, it was only the AS group that recorded a negative mean for meta-learning. To see if these mean differences were significant, they were explored further using inferential statistics.

Multivariate analysis showed significant differences between the participants on different courses and the mean scores given to the dimensions of learning. Using Pillai's trace, there was a significant difference between the participants on different programmes and the dimensions of learning, $V = .165$, $F(20, 1028) = 2.214$, $p < .05$, $\eta^2 = .04$. The one way ANOVA also indicated that there were significant differences between the value placed on the emotional dimension of learning, $F(5, 257) = 3.026$, $p < .05$, $\eta^2 = .06$, the value placed on the social dimension of learning, $F(5, 257) = 4.423$, $p < .05$, $\eta^2 = .08$, and the value placed on the meta-learning, $F(5, 257) = 2.326$, $p < .05$, $\eta^2 = .04$. However the value placed on the importance of knowledge was not significantly different, $F(5, 257) = 0.27$, $p > .05$. The Box test of Equality of Covariance matrices and the Levene's test of equality of error variances indicated that the assumption of homogeneity of variance could not be assumed. The Games-Howell procedure is considered reliable in such circumstances and can also be accurate when sample sizes are unequal (Field, 2009). Therefore the Games-Howell post hoc test was used to investigate how the differences manifested themselves.

Table 5.6 shows the findings from the Games-Howell procedure when comparing the value placed on the dimensions of learning between participants on different programmes.

Table 5.6. Comparing the programme differences for the value of different dimensions of learning using the Games-Howell procedure.

Course followed	compared with	Mean difference	Standard Error	Significance
	The Emotional Dimension of Learning.			
ASs	BTEC Level One	-.63	.27	.27
	BTEC Level Two	-.64	.16	.01*
	BTEC Level Three	-.17	.14	.84
	GCSEs	1.11	.54	.46
	A2s	-.12	.20	.99
BTEC Level One	ASs	.63	.27	.27
	BTEC Level Two	-.00	.29	1.00
	BTEC Level Three	.46	.28	.59
	GCSEs	1.73	.59	.19
	A2s	.51	.31	.59
BTEC Level Two	ASs	.64	.16	.01*
	BTEC Level One	.00	.29	1.00
	BTEC Level Three	.46	.18	.13
	GCSEs	1.74	.55	.20
	A2s	.51	.27	.26
BTEC Level Three	ASs	.17	.14	.84
	BTEC Level One	-.46	.28	.58
	BTEC Level Two	-.46	.18	.13
	GCSEs	1.28	.54	.37
	A2s	.51	.23	.26
GCSEs	ASs	-1.11	.54	.46
	BTEC Level One	-1.74	.59	.19
	BTEC Level Two	-1.74	.55	.19
	BTEC Level Three	-1.28	.54	.37
	A2s	-1.23	.59	.40
A2s	ASs	.12	.20	.99
	BTEC Level One	-.51	.31	.58
	BTEC Level Two	-.51	.23	.26
	BTEC Level Three	-.05	.21	1.00
	GCSEs	1.23	.59	.40
	The Social Dimension of Learning.			
ASs	BTEC Level One	-1.00	.22	.02*
	BTEC Level Two	-.57	.14	.00*
	BTEC Level Three	-.53	.15	.01*
	GCSEs	.03	.87	1.00
	A2s	-.14	.21	.98
BTEC Level One	ASs	1.00	.22	.02*
	BTEC Level Two	.43	.23	.48
	BTEC Level Three	.47	.24	.40
	GCSEs	1.03	.89	.83
	A2s	.86	.28	.09
BTEC Level Two	ASs	.57	.14	.00*
	BTEC Level One	-.43	.23	.48
	BTEC Level Three	.04	.17	1.00
	GCSEs	.60	.87	.97
	A2s	.43	.23	.46
BTEC Level Three	ASs	.53	.15	.01*
	BTEC Level One	-.47	.24	.40
	BTEC Level Two	-.04	.17	1.00
	GCSEs	.56	.87	.98
	A2s	.39	.23	.56
GCSEs	ASs	-.03	.87	1.00
	BTEC Level One	-1.03	.89	.83
	BTEC Level Two	-.60	.87	.97

	BTEC Level Three	-.56	.87	.99
	A2s	-.17	.88	1.00
A2s	ASs	.14	.21	.98
	BTEC Level One	-.86	.28	.08
	BTEC Level Two	-.43	.23	.46
	BTEC Level Three	-.39	.23	.56
	GCSEs	.17	.88	1.00
	The Importance of Knowledge			
ASs	BTEC Level One	.21	.24	.94
	BTEC Level Two	-.19	.22	.95
	BTEC Level Three	-.07	.13	.96
	GCSEs	-.02	.61	1.00
	A2s	.17	.51	1.00
BTEC Level One	ASs	-.21	.24	.94
	BTEC Level Two	-.40	.30	.77
	BTEC Level Three	-.28	.25	.86
	GCSEs	-.23	.64	1.00
	A2s	-.04	.55	1.00
BTEC Level Two	ASs	.19	.22	.95
	BTEC Level One	.40	.30	.77
	BTEC Level Three	.12	.23	.96
	GCSEs	.17	.64	1.00
	A2s	.36	.54	.98
BTEC Level Three	ASs	.07	.13	.96
	BTEC Level One	.29	.25	.86
	BTEC Level Two	-.12	.23	.96
	GCSEs	.05	.61	1.00
	A2s	.24	.51	1.00
GCSEs	ASs	.02	.61	1.00
	BTEC Level One	.23	.64	1.00
	BTEC Level Two	-.17	.64	1.00
	BTEC Level Three	-.05	.61	1.00
	A2s	.18	.79	1.00
A2s	ASs	-.17	.51	1.00
	BTEC Level One	.04	.55	1.00
	BTEC Level Two	-.36	.54	.98
	BTEC Level Three	-.24	.51	1.00
	GCSEs	-.18	.79	1.00
	Meta-learning.			
ASs	BTEC Level One	-.45	.32	.72
	BTEC Level Two	-.58	.25	.22
	BTEC Level Three	-.36	.15	.13
	GCSEs	-.60	.44	.75
	A2s	-.28	.26	.89
BTEC Level One	ASs	.45	.32	.72
	BTEC Level Two	-.13	.36	1.00
	BTEC Level Three	.09	.33	1.00
	GCSEs	-.14	.53	1.00
	A2s	.17	.40	1.00
BTEC Level Two	ASs	.58	.15	.13
	BTEC Level One	-.09	.33	1.00
	BTEC Level Three	.22	.26	.96
	GCSEs	-.01	.49	1.00
	A2s	.30	.34	.95
BTEC Level Three	ASs	.36	.15	.13
	BTEC Level One	-.09	.33	1.00
	BTEC Level Two	-.21	.26	.96
	GCSEs	-.23	.45	.99
	A2s	-.23	.45	.99
GCSEs	ASs	.60	.44	.75
	BTEC Level One	.14	.53	1.00
	BTEC Level Two	.01	.49	1.00
	BTEC Level Three	.23	.45	.99
	A2s	.31	.50	.98
A2s	ASs	.28	.26	.89
	BTEC Level One	-.17	.40	.99
	BTEC Level Two	-.30	.34	.95

	BTEC Level Three	-.08	.28	1.00
	GCSEs	-.31	.50	.98

*The mean difference is significant at the 0.05 level.

Exploring the emotional dimension of learning using the Games Howell procedure, significant difference ($p < .05$) was only found between the AS participants and the BTEC Level Two participants. The mean difference was .64 with the BTEC students indicating a greater value for the emotional dimension of learning than the AS students. However, caution must be adopted when making inferences because the sample size for each group varied widely. Mirroring the results of the ANOVA and as expected, there were no significant differences between any of the participants with regard to the programmes they were studying and the value given to the importance of knowledge. Interestingly and in contrast to the ANOVA, the Games Howell procedure indicated that there were no significant differences between any of the participants with regard to the programmes they were studying and the value given to meta-learning. Of note were the significant differences with regard to the social dimension of learning. Here it was found that there was a significant difference between the mean scores of the AS participants and all the BTEC participants with the BTEC participants indicating higher scores for the social dimension of learning. This finding is in synthesis with the differences between participants enrolled on exam based programmes compared with those on portfolio programmes. However, of particular note is the significant mean difference ($p < .05$) between the AS participants (N = 160) and the BTEC Level Three participants (N = 67) as these participants were studying at a level of equivalence, that is at Level Three.

It can be summarised that overall, the comparison of the scores on the PCA for participants on specific programmes generated few notable differences between those participants and the emphasis they placed on either the importance of knowledge, meta-learning or the emotional component of learning. Yet the analysis suggests that the BTEC students did value more highly the social dimension of learning when compared with the AS level participants and this value difference is significant.

5.5. Comparing participants with different GCSE point scores.

In Chapter 1, it was argued that young people do not have a truly free choice to follow their preferred courses in post-compulsory education. The choices that they make are dependent in part on their GCSE achievements. Those with very high GCSE scores are often encouraged to follow the academic programme of AS and A2 level. A minimum of five GCSEs grades A* to C is expected. For those on BTEC programmes the pathway is not so clear. The criteria for entrance onto a BTEC Level Three can be five GCSEs grade A* to C but it can also be the completion of BTEC Level Two in the same subject. The sample of participants used in this research indicates that participants on BTEC courses are often older than the AS students. They might have recently achieved BTEC Level Two in the same subject but not five GCSE grades at A* to C. Moreover, the BTEC Level Two participants at the colleges will not have achieved five GCSEs grades A* to C. Therefore in this final part of Chapter 5 it was felt appropriate to compare participants' expression of value for the four components of learning constructed from the PCA by looking at the self reports of the GCSE scores. Participants were placed into three groups. Group one was for those who reported that they had achieved 64 or more points on their GCSEs. These participants could be considered very successful at GCSE as they would have achieved perhaps a minimum of eight GCSEs at A*. Indeed, the highest score reported by a participant was 98 points, and this was made up of six GCSEs grade A (seven points) and seven GCSEs grade A* (eight points). Group two was for the participants that reported that they had achieved 25 to 63 points inclusive for their GCSEs, thereby indicating that they had achieved perhaps a minimum of five GCSEs grade C. This group was the largest (N = 168). Group three was for those who reported that they had achieved less than 25 points at GCSE, indicating that they had not reached the governments expected standard (DfE, 2011f). Participants who reported no GCSE scores were not included in the analysis. Table 5.7 shows the mean score for the value placed on the different dimensions of learning for these three groups.

Table 5.7. The mean and standard deviation for the scores on the dimensions of learning from participants grouped depending on GCSE score.

	GCSE point score group.	The Mean	The standard deviation.	N
The emotional dimension of learning.	64 points or more.	.16	1.07	38
	25 to 63 points	-.14	1.04	168
	24 points or less.	.34	.78	35
The social dimension of learning.	64 points or more.	-.57	1.12	38
	25 to 63 points.	-.02	.94	168
	24 points or less.	.37	.99	35
The Importance of knowledge.	64 points or more.	.20	.77	38
	25 to 63 points.	-.11	1.05	168
	24 points or less.	.17	.95	35
Meta-learning.	64 points or more.	.02	1.11	38
	25 to 63 points.	-.15	.94	168
	24 points or less.	.33	1.01	35
	Total			241*

*Note: the total is less than the sample size because of the exclusion of the missing data and the PCA.

It can be seen from Table 5.7 that the group with the GCSE scores higher than 64 points had a mean that was greater than zero for the emotional dimension of learning ($M = .16$, *SD,* 1.07), the importance of knowledge ($M = .20$, *SD, .77)* and meta-learning ($M = .02$, *SD,* 1.11) dimensions of learning. Yet for this group, the mean for the social dimension of learning was much less than the overall sample ($M = -.57$, *SD,* 1.07). In contrast, the group of participants with the GCSE scores of 25 points to 63 points had mean scores less than the overall zero for the four components of learning. The group with the reported GCSE scores of less than 25 were more similar to group one than group two as the mean scores for this group were greater than the PCA zero mean in each component.

A MANOVA using Pillai's trace indicated that the differences between the group means were significant, $V = .135$, $F(8, 472) = 4.26$, $p < .05$, $\eta^2 = .67$. ANOVA and post hoc tests were used to explore the mean differences between the groups further. The ANOVA indicated that there were no differences between the groups with regard to the value placed on the importance of knowledge but that there were significant differences for the emotional component of learning $F(2, 238) = 4.08$, $p < .05$, $\eta^2 = .03$, the social component of learning $F(2, 238) = 8.73$, $p < .05$, $\eta^2 = .07$ and for the meta-learning aspects of learning $F(2. 238) = 3.50$, $p < .05$, $\eta^2 = .03$. Of note is the effect size for the differences reported in the social component of learning.

The Box test of Equality of Covariance matrices indicated that the assumption of homogeneity of variance could not be assumed but the Levene's test of equality of error variances indicated that it could. Therefore two post hoc tests were adopted for further analysis. The Tukey procedure emphatically mirrored the results of the Games Howell procedure and it is the latter that is reported here.

Table 5.8. Comparing the three groups of GCSE scores for the value of different components of learning using the Games-Howell procedure

	GCSE point score group.	compared with	Mean difference	Standard Error	Significance
The emotional component of learning	64 points or more.	25 to 63 points.	.30	.19	.26
		24 points or less.	-.18	.22	.69
	25 to 63 points.	64 points or more.	-.30	.19	.26
		24 points or less.	-.48	.15	.01*
	24 points or less.	64 points or more.	.18	.22	.69
		25 to 63 points.	.48	-.15	.01*
The social component of learning.	64 points or more.	25 to 63 points.	-.55	.20	.02*
		24 points or less.	-.94	.25	.00*
	25 to 63 points.	64 points or more.	.55	.20	.02*
		24 points or less.	-.40	.18	.09
	24 points or less.	64 points or more.	.94	.25	.00*
		25 to 63 points.	.40	.18	.09
The importance of knowledge.	64 points or more.	25 to 63 points.	.32	.15	.09
		24 points or less.	.03	.20	.99
	25 to 63 points.	64 points or more.	-.32	.15	.09
		24 points or less.	-.29	.18	.25
	24 points or less.	64 points or more.	-.03	.20	.99
		25 to 63 points.	.29	.18	.25
Meta-learning.	64 points or more.	25 to 63 points.	.16	.19	.67
		24 points or less.	-.31	.25	.43
	25 to 63 points.	64 points or more.	-.16	.19	.67
		24 points or less.	-.47	.19	.04*
	24 points or less.	64 points or more.	.31	.25	.43
		25 to 63 points.	.47	.19	.04*

*The mean difference is significant at the 0.05 level.

As before, caution must be adopted when making inferences from the Games Howell procedure because the sample size for each group varied. However, exploring the emotional component of learning, just one significant difference ($p < .05$) was found. This was between those who achieved 25 to 63 GCSE points and those who achieved less than that. The mean difference was .48 with those with 24 points or less recording a higher score. Significant differences ($p < .05$) were also found within the meta-learning component between these same two groups. The mean difference was .47 and it was those with 24 points or less who had the higher mean score.

It is however, with regard to the social aspect of learning that the most notable differences were found. Here, those who had achieved 64 points or more differed from both the other groups significantly ($p < .05$). The mean difference with those who had achieved 25 to 63 points was .55 and with those who had achieved 24 points or less it was .94 and in both cases the high achieving group produced the lower scores. Compounding these results with the effect size reported earlier ($\eta^2 = .07$) it seems that those with high GCSE scores do not value the social component of learning as highly as those who perform less well at GCSE.

5.6. Summary of Chapter 5.

In this chapter the participants in the sample have been divided into groups depending on whether they went to sixth form college or a sixth form centre attached to a school, what specific site they went to, the programmes they were following and the GCSE scores they reported to have achieved. It was found in Section 5.1 that there were significant differences between the college and centre groups with regard to the emotional, social and meta-learning components of learning and it was suggested that institutional context is a variable to be considered when exploring the value young people have for different aspects of learning. In Section 5.2 the four different settings were compared and it was shown that there were no significant differences between the two colleges but that participants at SFA stood apart from the remaining three sites with regard to the reduced scores they reported for the emotional and social components of learning and the importance of knowledge. Section 5.3 demonstrated that participants enrolled on portfolio based programmes gave more value to the emotional, social and meta-learning components of learning than the participants pursuing exam based programmes. Section 5.4 investigated this further and outlined the comparison of the scores on the PCA for participants following different educational programmes. The evidence indicated that there were few notable differences between the groups with regard to the emotional component of learning, meta-learning or the importance of knowledge. Importantly though, it was found that all BTEC students placed a significantly different value on the social component of learning than the AS level participants. Finally, Section 5.5 explored the differences between the components of

those with different self-reported GCSE achievements. Here, the significant difference of importance was for the social component of learning where those with high GCSE scores expressed considerably less value for that component than the other groups.

The evidence presented thus far indicates that there is a relationship between the environment within which the participants are studying and their attitudes toward the components of learning that have been established in this research. Further, being enrolled on an AS course and having high GCSE scores seems to lessen the value that is expressed by participants for the social component of learning. However, it is not clear whether the differences that have emerged exist within settings as well as between settings. A greater variety of programmes were being studied at different levels by the participants in the colleges. Therefore, with the intention of establishing whether it is the programme or the environment that leads to the significant differences, Chapter 6 will begin with an examination of the specific differences between participants attending the sixth form colleges.

Chapter 6. Findings: Using the four PCA components to compare groups within and between the settings.

This final chapter of the findings will be presented in two parts. In the first part, the participants following different programmes within the college sites are compared. In the second part of the chapter, between and within site differences are explored to see if previous achievements impact on the value learners have for the different components of learning.

6.1. Comparing the participants on different programmes within the college sites.

All but three of the participants at SFA and SFB were enrolled on AS programmes. However, 197 participants in the research were attending either sixth form college SFC (N = 104) or sixth form college SFD (N = 93). They were following a wide range of programmes from BTEC Level One to A2. As their programmes of study were so varied, it is these students that are the focus of this section. Table 6.1 outlines the mean scores for each group for the four components of learning generated by the principal component analysis. Curiously, and in contrast to the AS participants from the whole sample, (see Table 5.5), the AS participants in the colleges generated positive means for all of the aspects of learning. Interestingly, no group generated a negative mean for the meta-learning component. However, the GCSE participants generated negative means for the emotional component of learning (M = -1.20, *SD,* 1.06*)*, the social component of learning (M = -.23, *SD,* 1.72) and the importance of knowledge (M = -.00, *SD,* 1.21). Further, the A2 participants generated negative means for the social component of learning (M = -.07, *SD,* .59) and the importance of knowledge (M = -.14, *SD,* 1.53). The BTEC Level One students also had a negative mean for the importance of knowledge (M = -.23, *SD,* .59).

Although these differences have been highlighted because they were within similar contexts, the sample size for these groups is so small that the use of inferential statistics is rendered meaningless. Nevertheless, inferential statistics were used to compare BTEC Level Three participants with AS participants because the group sizes were

substantial and because these students were following programmes at a level of equivalence, Level Three, but with different structures for learning.

Table 6.1. The mean and standard deviation for the scores on the components of learning from participants studying different courses at SFC and SFD.

Programme of Study	Mean	Standard Deviation	N
The Emotional Component of Learning.			
AS levels	.22	.94	43
BTEC Level One	.54	.67	7
BTEC Level Two	.55	.57	17
BTEC Level Three	.07	.94	64
GCSEs	-1.20	1.06	4
A2s	.07	.53	7
The Social Component of Learning.			
AS levels	.06	.79	43
BTEC Level One	.80	.59	7
BTEC Level Two	.37	.49	17
BTEC Level Three	.30	1.00	64
GCSEs	-.23	1.72	4
A2s	-.07	.59	7
The Importance of Knowledge			
AS levels	.17	1.03	43
BTEC Level One	-.23	.59	7
BTEC Level Two	.17	.84	17
BTEC Level Three	.05	.86	64
GCSEs	-.00	1.21	4
A2s	-.14	1.53	7
Meta-learning.			
AS levels	.19	.95	43
BTEC Level One	.29	.81	7
BTEC Level Two	.42	.96	17
BTEC Level Three	.19	1.00	64
GCSEs	.44	.87	4
A2s	.13	.77	7
Total			142*

*Note: the total is less than the sample size because of the PCA.

Using Pillai's trace, the MANOVA indicated that there were no significant differences between the Level Three programmes that the participants were pursuing within the sixth form college context, $V = .185$, $F(20, 554) = 1.323$, $p > .05$. Although the one way ANOVA suggested that there was a significant difference with regard to the emotional component of learning, $F(5, 136) = 2.968$, $p < .05$, $\eta^2 = .09$, the post hoc Games-Howell procedure did not support this. Therefore the evidence presented suggests that there were no significant differences between Level Three participants at both of the sixth form colleges with regard to the value they gave to aspects of learning. For confirmation, the same statistical analyses were carried out for each sample within SFC and SFD separately. No significant differences were found between participants following different Level Three programmes.

This comparison of participants on different programmes but within the same college reiterates the proposition from Section 5.2 that the setting may have some influence on the value that young people have for different aspects of learning. The findings indicate that the setting is a more significant variable than the type of programme that is followed. At the same time, it is essential to remember that different participants were experiencing different assessment methods that might influence the way they approached their learning. Therefore the participants following exam based programmes were compared with those following portfolio based programmes within and between the sixth form college settings.

6.1.2. Comparing participants following exam based programmes with those following portfolio based programmes between and within SFC and SFD.

Still focusing on the participants at sites SFC and SFD, a comparison was made between those who were pursuing exam based programmes compared with those following portfolio based programmes, regardless of the level. Table 6.2 shows the mean and standard deviation for these groups.

Table 6.2. The mean and standard deviation for the scores on the components of learning from participants following programmes with different assessment procedures at SFC and SFD.

	The four components of learning.								
College and assessment procedure	The emotional component of learning		The social dimension of learning.		The importance of knowledge.		Meta-learning.		N
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	
SFC and SFD									
Exam	.05*	.96	.09	.82	.07	1.08	.18	.89	54
Portfolio	.21	.90	.34	.92	.04	.84	.19	.97	79
SFC									
Exam	.03	1.07	.21	.66	-.31	1.26	-.27	.74	20
Portfolio	.09	.92	.22	.95	-.01	.87	.18	.92	55
SFD									
Exam	.07	.90	.03	.90	.29	.90	.44	.87	34
Portfolio	.47	.81	.60	.77	.17	.76	.21	1.12	24

*Note: all means and standard deviations are presented to two decimal places.

A one way ANOVA indicated that there were no statistically significant differences between participants who were being assessed in different ways across the colleges.

However, two within site comparisons were of importance. Within site SFC, a one way ANOVA indicated that there was a statistically significant difference between the values given to meta-learning $F(1, 73) = 3.99, p < .05, \eta^2 = .05$. The value given to this dimension from those pursuing exam based programmes ($M = -.27$, *SD,* .74) was considerably smaller than the value given to it by those pursuing coursework based programmes ($M = .18$, *SD,* .92). Within site SFD, a one way ANOVA indicated that there was a statistically significant difference between the values given to the social dimension of learning $F(2, 66) = 3.236, p < .05, \eta^2 = .09$. Table 6.2 shows that the participants following coursework based programmes valued the social dimension of learning ($M = .60$, *SD,* .77) much more highly than those following the exam based routes ($M = .03$, *SD,* .90). In Section 5.2 it was shown that participants at the colleges were always more positive toward these dimensions than their counterparts in the sixth form centres attached to the schools. These findings provide some indication that within sites other factors interact with the value that young people give to different components of learning.

However, although these within site differences should not be overlooked, they are just a fraction of what might impact on the students' values for learning. It has been emphasised that having different learning achievements may also influence the value that participants give to aspects of learning. Therefore, in Section 6.2, the three groups of GCSE achievement that were established in Section 5.5 were compared within all four sites.

6.2. Comparing the groups with different GCSE achievements within and between the sites.

It was noted in Chapter 2 that the participants from centre SFA had the highest mean score for GCSE performance. Indeed, Table 6.3 shows that the participants who had achieved the highest GCSE scores tended to be in the sixth form centres. Only four participants reported achieving more than 64 points at GCSE in either of the sixth form colleges. Only three participants reported achieving 24 points or less at the sixth form

centres. The greatest number of participants (N = 203) fell into Group two with GCSE scores between and including 25 to 63 points.

Table 6.3. The number of participants from each site in each of the GCSE groups.

Site	Group 1, 64 GCSE points or more.	Group 2, 25 to 63 GCSE points.	Group 3, 24 GCSE points or less.	Missing	Total
SFA	24	45	0	0	69
SFB	16	45	3	1	65
SFC	1	60	21	22	104
SFD	3	53	19	18	93
Total	44	203	43	41	331

Table 6.4 displays the means scores for the components of learning by setting and by GCSE grouping. It can be seen that six of the eight mean scores for centre SFA were negative whilst eleven out of twelve mean scores for college SFD were positive and this is in keeping with the findings from Section 5.2. These mean scores were compared using inferential statistics.

Table 6.4. The mean scores and standard deviations for the components of learning by site and GCSE grouping.

	The four components of learning.								
Site and GCSE group.	The emotional component of learning		The social dimension of learning.		The importance of knowledge.		Meta-learning.		N
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	
SFA									
64 points or more.	.18	1.20	-.87	1.01	.04	.74	-.07	1.27	23
25 to 63 points	-.73	.99	-.44	1.00	-.85	.98	-.65	.87	42
24 points or less.									0
SFB									
64 points or more.	.13	.96	.09	1.10	.57	.79	.09	.82	12
25 to 63 points	-.01	.87	.00	.87	.33	.94	-.12	.91	40
24 points or less.	.78	1.46	1.07	.55	.65	.14	.33	.86	3
SFC									
64 points or more.	-.28		.19		-.64		-.72		1
25 to 63 points	-.06	1.09	.12	.83	-.16	1.01	-.10	.90	45
24 points or less.	.32	.70	.29	1.20	.11	1.12	.34	.86	17
SFD									
64 points or more.	.30	.27	-1.4	1.24	.31	.35	.92	.18	2
25 to 63 points	.23	.95	.23	.94	.25	.83	.28	.88	41
24 points or less.	.28	.76	.33	.77	.14	.83	.31	1.24	15
Total									241*

*Note: the total is less than the sample size because of the PCA.

6.2.1. Within setting, GCSE group comparisons.

No significant differences were found between the three GCSE score groups for those who attended either SFB or SFC. A significant difference did emerge between those in Group one and Group two at college SFD with regard to the emotional dimension of learning, but given that Group one had a sample of two this finding was discarded. As there were just two groups for the data at centre SFA, an independent t- test was conducted. The t-test produced significant differences between Group one and Group two for two aspects of learning. Firstly there were differences for the emotional dimension of learning, t (39) = 3.11, p = .004. Interestingly, Group two generated less value for this dimension on the PCA than the high achieving group. Secondly differences were found for the value given to the importance of knowledge, t (63) = 3.80, p = .00. Again, Group two generated a mean (M = -.85, *SD,* .98*)* that was demonstrably lower than the high achieving group (M = .04, *SD,* .74).

6.2.2. Between setting, GCSE group comparisons.

Table 6.3 shows that there were 24 participants from SFA with GCSE scores of 64 points or more and 16 participants from SFB with GCSE scores of equivalence. These participants' mean scores for the dimensions of learning were compared using a t test. It was found that there were no significant differences between these participants on the emotional dimension of learning, the importance of knowledge or meta-learning. However, there was a significant difference with regard to the social dimension of learning, t (33) = -2.59, p = .01 and it can be seen that the mean for the high achieving group at SFA (M = -.87, *SD,* 1.01) was lower than that of SFB (M = .09, *SD,* 1.10). Table 6.3 also shows that there were 21 participants from college SFC and 19 participants from SFD who reported GCSE grade scores of 24 points or less. These participants mean scores for the components of learning were also compared. No significant differences emerged.

As was noted, it was participants who had achieved 25 points to 63 points at GCSE who constituted the substantive sample size. Thus the mean scores for those in Group two across the sites were compared. A MANOVA using Pillai's trace indicated that the differences between the group means were significant between the sites, $V = .292$, $F(12, 489) = 4.39$, $p < .05$, $\eta^2 = .1$. The one way ANOVA indicated that the significant differences applied to each component of learning. The Box test of Equality of Covariance matrices and the Levene's test of equality of error variances indicated that the assumption of homogeneity of variance could be assumed and so the Tukey procedure was utilised for post hoc tests.

Table 6.5. Comparing the participants with GCSE point scores 25 to 63 for the value of different dimensions of learning across the four settings using the Tukey procedure.

Group 2 GCSE participants at site	compared with site	Mean difference	Standard Error	Significance
		The Emotional Dimension of Learning.		
SFA	SFB	-.72	.22	.01*
	SFC	-.69	.21	.01*
	SFD	-.96	.22	.00*
SFB	SFA	.72	.22	.01*
	SFC	.05	.21	1.00
	SFD	-.24	.22	.68
SFC	SFA	.69	.21	.01*
	SFB	-.05	.21	1.00
	SFD	-.30	.21	.50
SFD	SFA	.96	.22	.00*
	SFB	.24	.22	.68
	SFC	.30	.21	.50
		The Social Dimension of Learning.		
SFA	SFB	-.45	.20	.13
	SFC	-.57	.20	.02*
	SFD	-.67	.20	.01*
SFB	SFA	.45	.20	.13
	SFC	-.12	.20	.93
	SFD	-.23	.20	.68
SFC	SFA	.57	.20	.02*
	SFB	.12	.20	.93
	SFD	-.11	.20	.95
SFD	SFA	.67	.20	.01*
	SFB	.23	.20	.68
	SFC	.11	.20	.95
		The Importance of Knowledge		
SFA	SFB	-1.18	.21	.00*
	SFC	-.69	.20	.01*
	SFD	-1.10	.21	.00*
SFB	SFA	1.18	.21	.00*
	SFC	.49	.21	.08
	SFD	.08	.21	.98
SFC	SFA	.69	.20	.01*
	SFB	-.49	.21	.08
	SFD	-.41	.20	.18
SFD	SFA	1.10	.21	.00*
	SFB	-.08	.21	.98
	SFC	.41	.20	.18
		Meta-learning.		
SFA	SFB	-.53	.20	.04*

	SFC	-.54	.19	.03*
	SFD	-.93	.20	.00*
SFB	SFA	.53	.20	.04*
	SFC	-.02	.19	1.00
	SFD	-.40	.20	.19
SFC	SFA	.54	.19	.03*
	SFB	.02	.19	1.00
	SFD	-.39	.19	.19
SFD	SFA	.93	.20	.00*
	SFB	.40	.20	.19
	SFC	.39	.19	.19

*The mean difference is significant at the 0.05 level.

Even though this was a comparison of students that had all achieved the equivalence of at least five GCSEs grade C, the Tukey procedure demonstrated that there were still significant site differences. The mean score generated for the emotional dimension of learning was significantly lower at site SFA compared with those at SFB, SFC and SFD. This pattern was repeated for the importance of knowledge and meta-learning. Whilst the mean score generated by participants with between 25 and 63 GCSE points at SFA was always lower for the social dimension of learning, this was only found to be significantly different from SFC and SFD; it was not significantly different from SFB.

6.3. Summary of Chapter 6.

In the first part of this chapter, the differences between the mean scores for the components of learning of those on different programmes but within the sixth form college settings were considered. It was found that regardless of the type of Level Three qualification that participants were following, there were no differences across the two colleges or within the college sites. Comparisons were then made between all the participants following exam based programmes and all those following the portfolio based programmes. No differences were found across the two colleges but participants at SFC on portfolio programmes valued meta-learning more highly than their exam based peers and at college SFD, the participants on portfolio based programmes valued the social dimension of learning more highly than their exam based peers. With regard to prior achievements, at centre SFA, group one generated significantly higher mean scores for the emotional dimension of learning and the importance of knowledge component compared with the group two participants. The comparison of participants with similar achievements across sites provided three important findings. Firstly, the

mean scores generated by those with less than 25 GCSE points at the colleges were not significantly different. Secondly, there was just one significant difference between the mean scores of those with more than 64 points at site SFA and SFB and that was for the social component of learning, where centre SFA generated a lower mean than SFB. Thirdly, significant differences between the mean scores for the emotional component of learning, the importance of knowledge and meta-learning were generated by the participants who reported achieving between 25 and 63 GCSE points at SFA compared with those with similar achievements at SFB, SFC and SFD. There were no significant differences between the means for the social component of learning for this group when SFA was compared with SFB but for every other comparison, SFA participants expressed value was significantly different to SFB, SFC and SFD.

Chapter 7. Discussion.

The research had two overarching aims. Firstly it had the theoretically based ambition to explore the application to young post-compulsory learners of the three dimensions of learning that Illeris (2007) suggested are integral to the process of learning. Secondly, it had the practical aim of assessing the value that young people gave to different aspects of the dimensions of learning. In this chapter, the overall findings from the research will be outlined. These will then be utilised to consider the aims of the research. In Sections 7.2 and 7.3 the application of the theoretical model offered by Illeris will be considered in light of the findings and the main research questions will be answered. In Sections 7.4 to 7.7, the subsidiary research questions will be answered and the value generated to different components of learning by the different groups of participants will be discussed. In Section 7.8 three other important findings will he highlighted. From there, the implications of the findings will be considered. The answers to the research questions will be utilised to consider the importance of the concept of epistemic identity, the application of learning theory to post-compulsory learners and the socio-economic context. I will begin by summarising and clarifying the overall findings.

7.1. The overall findings.

Three hundred and thirty one participants completed a questionnaire that was designed to capture the value that they gave to the three dimensions of learning as articulated by Illeris (2007). It was found that as a group, the participants expressed a positive value for each of the dimensions of learning. However, they expressed the highest value for the items that were designed to measure the content dimension of learning. This was followed by the items for the social dimension of learning and the participants expressed the lowest value for the items designed to measure the emotional dimension of learning.

The responses to the items of the questionnaire were then analysed using a principal component analysis. This established that four separate components of learning were

recognised by the participants. These latent variables were named the social dimension of learning, the emotional dimension of learning, meta-learning and the importance of knowledge. The four components were used to explore potential differences between groups of participants and the values to learning that they expressed.

The findings were:

The participants at the sixth form colleges expressed a statistically significantly higher value for the emotional, social and meta-learning components of learning than the participants at the sixth form centres.

There were no significant differences between the participants attending both of the sixth form colleges.

The participants following portfolio based programmes expressed significantly higher value for the emotional, social and meta-learning components of learning than the participants pursuing exam based programmes.

All BTEC students placed a significantly higher value on the social component of learning than the AS level students.

The participants at sixth form centre SFA stood apart from those at centre SFB, and colleges SFC and SFD because they expressed significantly lower value for the emotional component of learning, the social components of learning and the importance of knowledge.

All the participants who had achieved a GCSE score above 64 points expressed significantly lower value for the social component of learning than all those who had achieved less than 64 points.

The participants from SFA with a GCSE score above 64 points expressed significantly lower value for the social dimension of learning than those equivalent participants from SFB.

The participants at SFA who had achieved a GCSE score between and including 25 to 63 GCSE points expressed significantly lower value for the emotional component of learning, meta-learning and the importance of knowledge when compared with the equivalent participants from centre SFB, college SFC and college SFD.

The participants at SFA who had achieved a GCSE score between and including 25 to 63 GCSE points expressed significantly lower value for the social dimension of learning when compared with the equivalent participants from colleges SFC and SFD.

Within centre SFA, participants who had achieved a GCSE score above 64 points expressed significantly higher value for the importance of knowledge than those who had achieved less than 64 points.

Within centre SFA, participants who had achieved a GCSE score above 64 points expressed significantly higher value for the emotional component of learning than those who had achieved less than 64 points.

Within college SFC, participants who were following portfolio based programmes expressed significantly higher value for meta-learning than those following exam based programmes.

Within college SFD, participants who were following portfolio based programmes expressed significantly higher value for the social component of learning than those following exam based programmes.

7.2. Do young post-compulsory learners in sixth form settings demonstrate cognisance for different dimensions of learning?

Succinctly, the answer to this question is that young post-compulsory learners in sixth form settings are able to demonstrate cognisance for different dimensions of learning. The blueprint that was described in Chapter 2 was designed to capture different manifestations and content areas of learning. The questionnaire built on the blueprint. The analysis of the responses to the items on the questionnaire demonstrated both concurrence of response to some groups of items and notable difference of response to other grouped items. These patterns confirm the existence of an understanding about different aspects of learning by young people in this study. What these patterns indicate about the value given to different dimensions is worthy of discussion; a discussion that will be engaged in below.

7.3. What value do young post-compulsory learners in sixth form settings express for the three dimensions of learning as outlined by Illeris (2007)?

The answer to this second question is nuanced. The findings presented began in Chapter 3 with an exploration of the response to all the items using descriptive statistics. The items that had been designed to measure each dimension using Illeris's (2007) framework were analysed. It was found that all of the dimensions of learning scored means that were greater than two. Therefore it can be surmised that the three dimensions of learning were valued highly by the participants. Yet, this answer masks the complexity of the findings. There were marked differences in responses to particular statements with some items generating very high means. The inferential statistics in Chapter 3 indicated that there was significantly greater endorsement for the statements measuring the content dimension compared with the statements measuring the social dimension and that, in turn, was valued more highly than those for the emotional dimension.

Nevertheless, the principal component analysis justified in Chapter 4 did not completely endorse the division of the items in the way that they had been designed. The PCA

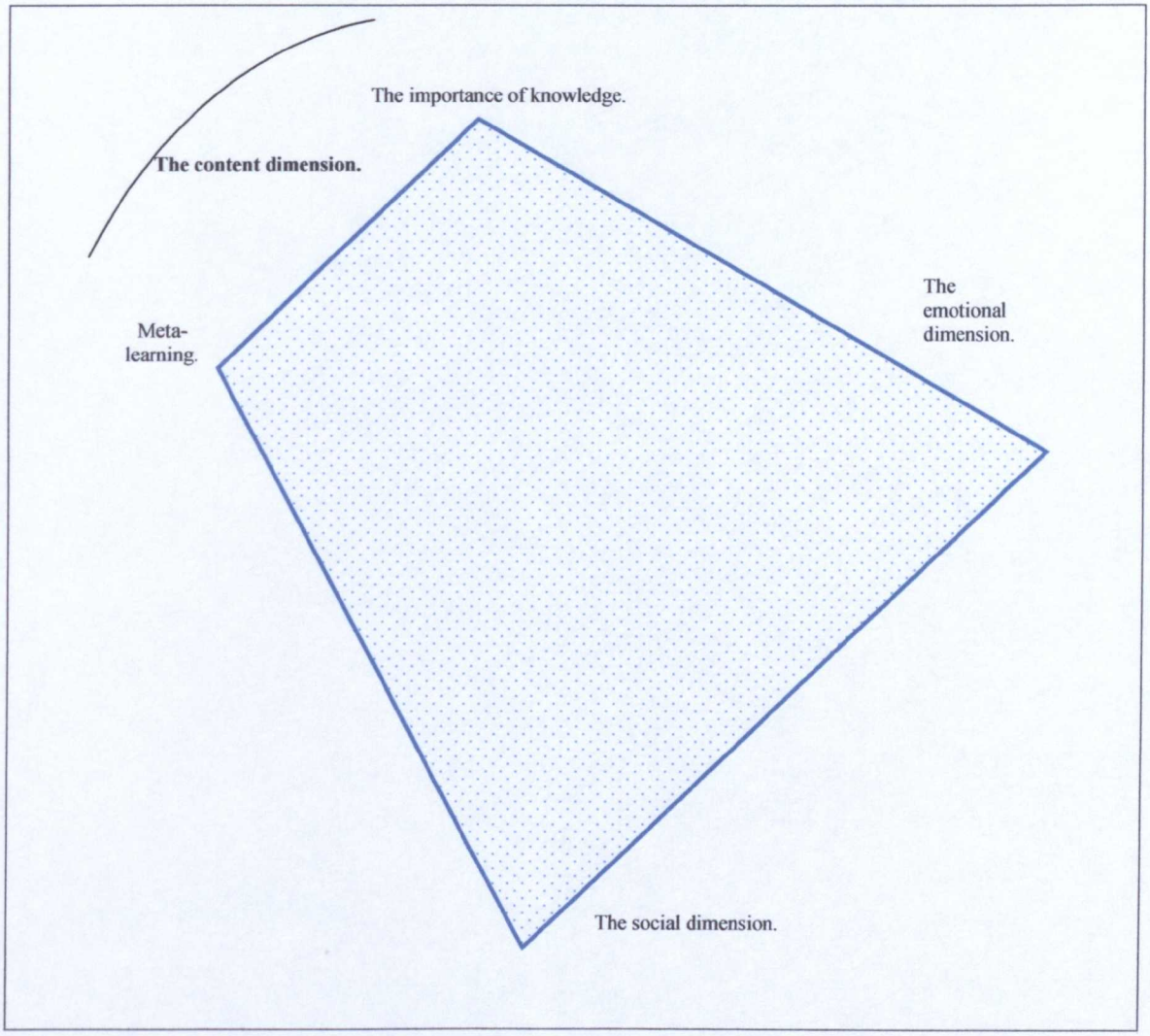
provided confirmation that the items that were intended to measure the social dimension of learning and the emotional dimension of learning were fit for purpose. It affirmed that the items within these two dimensions were recognised by young people as extant and distinct. However, contrary to the intended design of the blueprint, four components of significance were generated rather than three. An 'importance of knowledge' component emerged because several items that asked about the specific value for the acquisition of knowledge were factored together. Remembering the statement from Illeris (2007) that for learning to be meaningful then there must be something to learn, then the emergence of such a component is not surprising. However, other statements from the content dimension asked about approaches to learning. The PCA blended these with two items from the emotional dimension and two items from the social dimension. In Chapter 4, this component was labelled meta-learning in accordance with the definition provided by the Education Council (2006) and outlined in Section 1.8.1. I have pointed out that for Illeris (2007), meta-learning was part of an accommodative process and therefore he placed it into the content dimension of learning. It involves 'understanding the fundamental conditions' for assimilative and accommodative learning (Illeris, 2007, p. 68). Here, however, the PCA provided evidence that the participants were able to distinguish between what they needed to know and how they went about acquiring that knowledge. The responses from the young people indicated that meta-learning was an established component that 'empirically' summarized 'the correlations among the variables' (Tabachnick and Fidell, 2007, p. 25). It may be that whilst for Illeris (2007), the content dimension incorporates the acquisition of knowledge and the cognitive processes required to acquire that knowledge, the young people in this research were distinguishing between the two in an explicit effort to learn in institutional settings. Illeris (2007) acknowledges that the desire to learn can be undermined firstly by educational structures and secondly by negating the need of young people to connect their learning to themselves in pursuit of identity formation. Mindful of the constrained choices that young people have as they enter post-compulsory education, meta-learning as it has emerged and been defined in this thesis, might be a process with which students can make their learning more manageable for themselves. It can be proposed that for the

young people in this research, meta-learning is not transformative in the way that Illeris (2007) purports, but necessary for success.

I would suggest that the evidence for the four components presented here creates two simultaneous challenges to the theoretical proposition of a three dimensional theory of learning that is considered to be comprehensive. Firstly, the emergence of the two components that I have labelled 'importance of knowledge' and 'meta-learning' may indicate that the content dimension has two elements within it and that the participants were able to articulate value for different elements of learning in relation to the content they wished to learn. If this is feasible, then Illeris's (2007) content dimension cannot adequately be described as one dimension in its entirety but must be considered to have two aspects within it. A model that represents this conceptualisation is presented in Figure 7.1. It can be seen than unlike Illeris's (2007) model presented in Figure 1.1, in this model the content dimension has been separated to include the importance of knowledge and meta-learning.

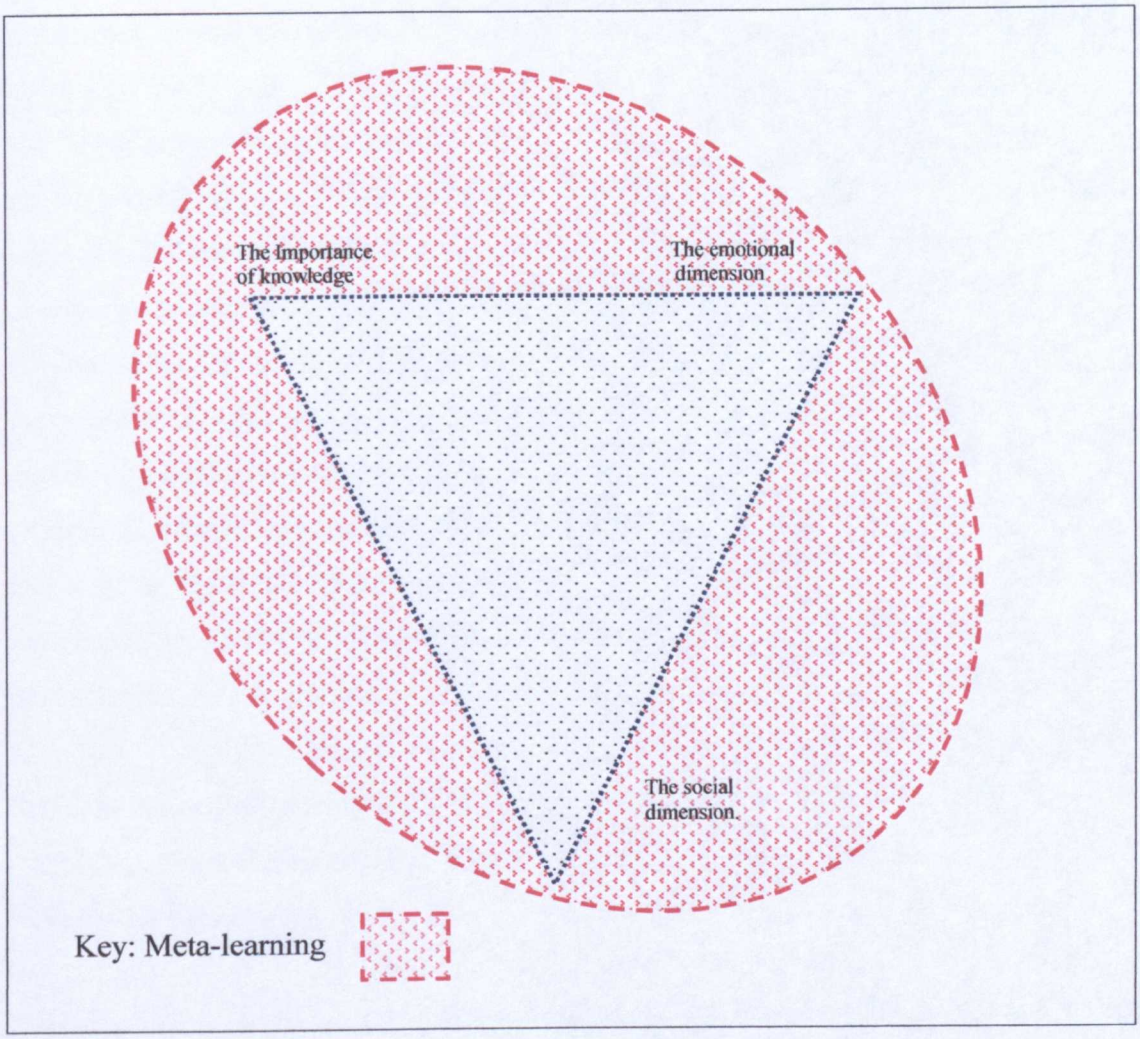
Secondly, it would seem reasonable to propose that the evidence presented allows for the suggestion that with regard to the value given to learning by young people in formal sixth form settings, the fourth domain of meta-learning encompasses the three dimensions of learning. This is because the meta-learning component drew in statements from all areas of the blueprint. Hacker et al. (2009) state that by definition meta-learning is a 'higher order, executive process that monitors and co-ordinates other cognitive processes' (p. 108). Therefore its position enveloping other dimensions may be justified. As young people conceptualise their learning, they demonstrate cognisance of the three dimensions. This cognisance as expressed in the evidence presented here might be meta-learning as defined by the Education Council (2006)

Figure 7.1. The dimensions of learning with two aspects for the content dimension.



However, as the overall mean score for the meta-learning component was less than the overall means for the other components, participants articulated more ambivalence towards it. Figure 7.2 outlines a model that incorporates the three dimensions of learning but transposes on to it the domain of meta-learning. To acknowledge that most of the meta-learning items were drawn from the content area of the blueprint, the oval that represents the meta-learning domain is skewed toward that dimension. To symbolise the potential uncertainty for meta-learning the domain has a dashed line.

Figure 7.2. Three dimensions of learning enveloped by meta-learning.



Therefore, the evidence presented here unpacks further the three dimensions of learning that Illeris (2007) proposed. Whether the content dimension is divided as with Figure 7.1 or whether meta-learning envelops the other dimensions as with Figure 7.2, it can be argued that when exploring the values that are held for components of learning by young post-compulsory learners in formal post-compulsory settings, it is right to employ a nuanced model for a dimensional theory of learning.

In summary, to answer the second research question: the participants in this sample expressed high levels of worth for the three dimensions of learning but they also separated the content dimension and distinguished between the importance of

knowledge and meta-learning. Whilst the participants demonstrated a high regard for the former, their appreciation for the latter was less certain, but it was still distinct.

Having addressed the two main research questions, it is appropriate to consider the answers to the three subsidiary questions. These were: do different institutions engender different values for elements of learning, do different qualification pathways engender different values for elements of learning and do prior educational achievements engender different values for elements of learning? Before considering these questions, it is important to recognise that they were framed by the three dimensions of learning articulated by Illeris (2007). However, as discussed in this section, the research has generated evidence for the division of the content dimension of learning into the importance of knowledge and meta-learning, thereby converting three dimensions into four. It is with these four components in mind that the questions are considered.

7.4. Are there differences between young people attending different institutions in the post-compulsory sector and the values to learning that they express to the different elements of learning?

Using the components generated by the PCA, it was shown in Chapter 5 that the participants at the sixth form colleges were statistically significantly more positive about the value of the emotional, social and meta-learning components of learning than the participants at the sixth form centres. Whereas the mean scores for the sixth form centre participants were less than zero, the mean scores for the college students were positive. Further, there was a medium effect size for the significant difference between the sixth form colleges and the sixth form centres with regard to the social dimension and meta-learning. There were no significant differences between the two sixth form colleges for any of the components of learning measured.

Furthermore, and of marked importance, in Chapter 6 the differences between the mean scores for the dimensions of learning of those on different programmes but within the sixth form college settings were considered. Regardless of the type of Level Three

qualification that participants were following, there were no differences across the two colleges or within the college sites. This suggests that the two colleges investigated were promulgating a similar culture for learning. It seems to be an approach that values the social dimension of learning in formal learning situations and encourages young people to think about how they learn. At the same time, there were significant differences expressed for the value given to the emotional dimension of learning, the social dimension of learning and the importance of knowledge between the two sixth form centres. For each dimension the participants at centre SFA generated a lower mean than those at centre SFB. However, the value for meta-learning was not significantly different for each centre, and in both cases it was less than zero. This reinforces the contrast to the findings for the sixth form colleges. Furthermore, whereas SFA was significantly different from the college sites for each dimension of learning, participants at SFB were more similar to the college participants and the analysis generated only two significant differences. They valued significantly more highly the importance of knowledge when compared with SFC and they gave meta-learning significantly less value than SFD. Therefore, with the values of the participants of SFB nestled between those of the sixth form colleges and SFA, it seems that the participants at the latter site stood apart from the other participants. The numerical value they expressed for the dimensions of learning was consistently smaller.

Hence, the evidence presented here indicates that there is a relationship between the values expressed by young people to the dimensions of learning and the institutions that they attended. This is especially marked between those attending college and those attending sixth form centres attached to schools. It is worth remembering that the mean age of the participants at the colleges was greater than at the sixth form centres, and that the cultural mix at the colleges was greater than at the sixth form centres. These variables may interact with the students' conceptualisations of what is important for learning. At the same time, it was the participants at SFA that had the highest achieving young people with regard to recognised qualifications. The contrast between the value given to different dimensions of learning and exam success is stark.

7.5. Are there differences between young people enrolled on different qualification pathways and the values that they express to the different elements of learning?

Section 5.4 outlined the comparisons of the scores on the PCA for participants following different educational programmes. It was found that there were few notable differences between the groups with regard to the emotional component of learning, meta-learning or the importance of knowledge. Importantly though, it was found that the BTEC students at each level placed a significantly different value on the social dimension of learning than the AS Level participants. Similarly, the participants pursuing portfolio based programmes were more positive towards the emotional dimension of learning, the social dimension of learning and meta-learning than those enrolled on exam based programmes. It has already been established that there were significant context differences. All but three of the BTEC students were attending the sixth form colleges and they pursued the portfolio based programmes. To ascertain whether the programmes generated different values for components of learning within the two sixth form colleges, comparisons were made between AS Level participants and BTEC Level Three participants at the two colleges. No significant differences were found. Moreover, no statistically significant difference was found between the participants enrolled on portfolio based programmes and those enrolled on exam based programmes across both the sixth form colleges. However, there were two significant differences within the colleges for these groups. At SFC this was with regard to meta-learning and at SFD it was with regard to the social dimension of learning. Therefore there is evidence of the 'backwash' effect of assessment within the college sites (Biggs, 1998). In this research, that effect is related to a more positive appreciation for dimensions of learning by those who are following programmes that are not assessed by exams. Yet, it is the AS participants at SFA that had the highest achieving young people with regard to recognised qualifications. It is feasible that whilst participants at the colleges articulate that they view the processes of learning as broad and varied, this is not recognised in the way formal education is currently operating nor is it necessary for exam success.

7.6. Are there differences between young people with different prior educational achievements and the values that they express to the different elements of learning?

Section 5.5 explored the differences between the dimensions of those with different self-reported GCSE achievements. Here, the significant difference of importance was for the social dimension of learning where those with high GCSE scores expressed considerably less value for that dimension than the other groups. Further analysis in Chapter 6 demonstrated that this difference could be attributed to the high achieving participants at SFA as they generated a significantly lower mean than their comparators at SFB. Also in Chapter 6, comparisons were made between all the participants who had achieved between 25 and 63 GCSE points because this was the substantive sample. There were no significant differences between the mean for the social dimension of learning for this group when participants at centre SFA was compared with those at SFB but SFA was significantly different to SFC and SFD. For the emotional dimension of learning, meta-learning and the importance of knowledge, SFA participants expressed value was significantly different to the comparable participants at SFB, SFC and SFD.

The high exam performers at SFA did demonstrate significantly greater value for the emotional dimension of learning and the importance of knowledge when compared with those who had achieved between 25 and 63 GCSE points at the same site. This recognition of the emotional dimension of learning by the high achievers is interesting. They may be showing a determination to study that whilst highly individualistic, is helping them maintain motivation through the academic education system.

Finally, all the students who reported having less than 25 GCSE points generated similar values for the dimensions of learning to the other GCSE groups, regardless of their site. The evidence presented suggests that those who had low prior educational achievements were just as cognisant of the components of learning as other students.

7.7. A summary of the answers to the three subsidiary questions.

The answers to the three subsidiary questions are important. The evidence presented suggests that the predominant variable interweaving with the value that young people have for the dimensions of learning is the setting in which they learn. This is because any significant differences that were measured between participants on different programmes were subsumed by whether they attended the sixth form colleges or the sixth form centres. However, the differences between those following exam based programmes or portfolio based programmes at the colleges needs to be highlighted because they indicate that there is a relationship between assessment and values to different elements of learning. Moreover, the differences between the high achievers and medium achievers at centre SFA should not be ignored as this is indicative of a relationship between the value given to aspects of learning and prior educational achievements.

The differences between contexts have implications for practitioners engaged with young people in the post-compulsory sector. These implications relate to the notion of epistemic identity, the socio-economic context and the application of learning theory to teaching and learning practices. Each of these will be discussed in turn in Section 7.9. To ensure that the discussion is thorough, three other findings of significance need to be considered. These are drawn from Chapter 3 and will be outlined below.

7.8. Other findings.

7.8.1. Futures.

All the young people in this sample were acutely conscious of how much was required of them if they were to be successful in the future. They indicated strongly that they thought achievement in life was conditional on knowledge and information, whether they went on to university or into work. At the same time, participants endorsed the notion that they needed to be able to work with others in the future. Nearly half the participants acknowledged that thinking about their futures was stressful.

7.8.2. Contentment.

Items for the social dimension of learning showed that the participants reported enjoying learning with each other and appreciated the need to be asked and ask questions. Moreover, it was shown from the items designed for the emotional dimension of learning that most participants were content with the choices that they had made thus far. They felt motivated and were happy to follow the programmes they were enrolled on.

7.8.3. Knowledge dominance but acquisition ambivalence.

The contrast between the values expressed for knowledge and how we acquire knowledge needs to be emphasised. Repeatedly, the statistics demonstrated that the participants considered knowledge to be very important. The items that measured this were most regularly endorsed. It was shown in Chapter 3 that over 90% of the young people recognised the need for qualifications that showed what they knew. Yet, 55% of the participants said that they tended to learn what was set and do nothing more, 61% said that they did not re-read notes to make sure they understood them and 45% said that they did not think over what they had learned to make sure they understood it. There was a marked reduction in the endorsement for strategies for acquiring knowledge compared with the knowledge itself. This could be because of the impact of external factors. More than half of the participants acknowledged that it was difficult to study in the knowledge that getting a job would be challenging. Alternatively, it could be that for all the emphasis placed on the need for knowledge, the students were less certain about how to secure it.

The findings regarding futures, contentment and knowledge acquisition complete the first part of the discussion.

7.9. Implications of the findings.

The evidence presented supports the argument that different institutions, different qualification pathways with different assessment procedures and different prior achievements impact on how young people value different components of learning. Most participants were content with the learning experiences they were having but were anxious about their futures. These findings have implications for my professional role and the wider professional context of those engaged in the post-compulsory sector. The implications of the findings will now be considered. Firstly, the implications with regard to the notion of epistemic identity will be discussed. Then the application of learning theory to teaching and learning practices will be considered. This will lead to a discussion of the implications for the professional development of teacher educators. Finally, the implications for the socio-economic context will be reviewed.

7.9.1. The development of an epistemic learning identity.

It was argued in Section 1.9.1 that for young people, learning is tightly bound up with matters of identity (Bloomer and Hodkinson, 2000). Illeris (2007) states that up to puberty, the child will 'seek to acquire as many of the influences it meets as possible, trustingly and without censorship' (p. 255). Acquiescence however has its limitations and Brown (1997) suggests that 'one cannot expect students to invest intellectual curiosity and disciplined enquiry on trivia' (p. 407). The evidence presented here indicates that young people in late adolescence make decisions about how to approach their learning. Some of the participants in this research were discerning about what they wanted to learn and how they wanted to do it. In short, they adopted meta-learning. Nevertheless, the findings indicate that its employment is not universal. However, returning to the situation in which the learning occurs, the findings suggest that if the context encourages some meta-learning activity, then this is seen as valuable by young people. Peim and Hodkinson (2007) state that 'what actually counts as good learning is at least partly, but necessarily, socially constructed' (p. 395). Bloomer and Hodkinson (2000) concur stating that learning identity is dovetailed with the situation. If, as Illeris (2007) proposes, youth filter their learning impulses through questioning how the

learning is relevant to them, then in some settings and on some programmes, young people are convinced that meta-learning is worth engaging with. Yet for Illeris (2007), meta-learning is 'topical' (p. 65). As the concept emerged in the 1970s (Flavell, 1976; Flavell, 1979), the possible implication that it is merely fashionable is unreasonable. I would argue that without knowing the theoretical terminology, some learners in the post-compulsory sector are making active decisions about how they approach their learning. They take ownership of their own learning theories. From this it can be inferred that some young people are developing expansive epistemic identities whilst others might be developing contracting epistemic identities.

To elaborate this further, the mean scores for the participants at SFA were consistently lower than at the other sites. Paradoxically, these were the highest achieving students. It is possible that this contradiction occurs through an interaction between the context, the programmes studied and the prior achievements. All of the participants at SFA were studying for ASs. Lawy et al. (2004) argue that the A Level curriculum offers no provision for the promotion of young people's awareness of their own positions in a changing world. Further, A Levels do not connect formal education with the real life experiences of young people (Lawy et al., 2004). It may be that in their context, the participants at SFA were doing what they were expected to do, but were not overly concerned with how they did it. In their centre, with all students studying for qualifications assessed by exams, their sense of epistemic identity might be dormant. In contrast, the participants at college SFD and the students following coursework based programmes generated higher means for the dimensions of learning, thereby indicating consideration of the dynamics of learning, and perhaps expansive learning identities. Moreover, considering the lack of value attached to meta-learning at SFA, it might be that they approach learning at a surface level. This could be particularly true for those moderate achievers who valued the emotional dimension less than the high achievers. Sfard (1998) argues that the current discourse on learning shows that educational research is caught between the learning as acquisition metaphor and the learning as participation metaphor. She suggests that the former is so entrenched in our minds that we would probably never have become aware of its existence if another alternative metaphor had not started to develop. Although she is talking about educational

researchers, there is the possibility that her statement applies to educational practitioners in particular contexts. The uncertainty articulated for the value of particular aspects of learning evidenced in this research by some groups of participants may need consideration by teachers. They may be implicitly allowing young people to form learning identities that also conceptualise learning within a narrow framework. The inference that epistemic learning identities are being shaped by the factors of college context and programmes studied needs to be unpacked further. This will be carried out below through the consideration of the application of learning theory to teaching and learning in the sector.

7.9.2. The application of learning theory to teaching and learning practices in the post-compulsory sector.

The research presented here has explored the possibility of using Illeris's (2007) theoretical framework as a tool with which to measure the value young people in the post-compulsory sector place on the three dimensions of learning. Remembering Illeris's (2007) emphatic insistence that 'all learning involves these three dimensions, which must always be considered if an understanding or analysis of a learning situation is to be adequate' (p. 25), I would argue that using this model has allowed for some insight into the understanding that young people have of different dimensions of learning. It would be unfair to expect Illeris's (2007) model to be appreciated in practice when it is not universally known. However, there is much to take from the application of the model.

Firstly, the value given to the emotional dimension by the participants always trailed behind the value given to the content dimension of learning. This might be because the participants chose not to make explicit their incentive thinking, or it might be an under emphasis on the need to be motivated and to have volition. Marton and Booth (1997) suggest that whilst some aspects of learning become figural, others are 'relegated to the margin' of awareness in learning (p. 99). The evidence indicates that although the emotional dimension of learning was recognised, it was seen as more peripheral than the content dimension. Yet, the holistic view that Illeris (2007) propounds challenges this.

And, perhaps the professionals engaged in the post-compulsory sector should counter any peripheralisation of the emotional dimension in young people's conceptualisations of learning. The dissemination of these findings could encourage practitioners to engender explicit dialogue of incentive and volition, allowing learners to think through their value for what it is they want to learn and how to approach that learning effectively. In this way, there could be the encouragement of an expansive learning identity.

Secondly, the finding that significantly different value was given to the social dimension of learning by participants in different contexts illustrates that there are situational factors interacting with the perceptions of the young people and informing the view of learning that they develop. In Section 1.7.2, I suggested that the focus of this paper was the immediate situation of the learning. However, it can be argued that enveloping that is the pervasive culture of the college in which the students find themselves. The participants who attended college were sharing a dialogue and meaning that in some way recognised the importance of learning as a social activity more than those in the sixth form centre settings. Indeed, there are many advocates of the view that learning is a social activity and much evidence that social interaction can facilitate cognitive functioning (Ybarra et al., 2008; Lucas and Claxton, 2010; Robinson and Aronica, 2010). Yet, Lucas and Claxton (2010) suggest that 'for the most part schools remain stubbornly focused on individuals' (p. 111). The findings here suggest that colleges do not. For me, this is heartening and disheartening simultaneously. I will explain why.

The findings are heartening because I find those that advocate that learning is a social activity persuasive. I would suggest that the explicit appreciation for the social dimension by the college students needs to be known by my teacher trainees in college settings. If I as a teacher educator raise awareness of this, then new teachers can build on the values for learning that their students have to ensure that learning activities formed from all of the dimensions of learning are incorporated into their teaching sessions.

At the same time the evidence is disheartening because I acknowledge that the highest achievers in this sample, as measured by GCSE performance, were in the sixth form centres. Giving less value to the social dimension of learning, the emotional dimension of learning or meta-learning was not detrimental to exam success. Returning to the argument of Biggs (1998), it might be inevitable that in a system that assesses through exams the content dimension of learning is prioritised by students in the post-compulsory sector. Watkins et al. (2007) suggest that a school system that overemphasises tests gives young people the impression that 'what is not measured is not valued' (p. 49). This dynamic might be at play in the sixth form centre settings in this research. Furthermore, even if the preference for the social dimension of learning expressed by the college participants precedes the context, then this preference has been negated by the systems that the learners find themselves in. Prior to college, the value they had for particular elements of learning might not have been nurtured to advance their achievements. Although the model for the three dimensions of learning might be useful, the implications are that if practitioners emphasise the predominance of the content dimension, then exam success will follow.

Thirdly, the PCA's distinction between different aspects of the content dimension of learning within the three dimension model of learning may be useful and has implications for practice. For me, the distinct character of meta-learning that emerged in the research means that it should be included in a contemporary model of learning. After all, the evidence presented here shows that meta-learning was reported by some young people in some settings in such a way that indicated that they were making explicit efforts to engage with formal learning. Whereas the importance of knowledge was less likely to be valued differently by participants in different contexts and on different pathways, the sixth form centre participants showed less appreciation for meta-learning than those at the college sites. The participants at SFD valued meta-learning the most. It is not possible for me to outline the characteristics of SFD further without compromising its anonymity. However, I feel confident that it is a college that encourages meta-learning awareness. For instance, in each classroom there is a poster that asks the students if they have come to the lesson ready to learn and prepared to exert themselves. The overt emphasis on meta-learning might be influencing the

students and allowing them to think more consciously about what skills they need to learn effectively in their college. This practice might be beneficially disseminated to other contexts. Institutional cultures can engender independent learning skills that are transferable from one situation to another (Claxton, 2006). Such a proposition might challenge Illeris (2009) because for him learning is libidinal. Yet at the same time he acknowledges that some settings can undermine the process of learning and I have already said that he purports that barriers to learning are couched in the three dimensions of learning (Illeris, 2006). If this is accepted, I would argue that explicit use of meta-learning might overcome the barriers. Whether the learning process is accommodative or assimilative, making young people conscious of it might be beneficial to them. Chapter 1 outlined interventions where school students have been enabled through meta-learning. What is useful here is the evidence from the post-compulsory sector that different contexts alter the way young people consciously engage with strategies for learning. Lawy et al. (2004) suggest that colleges ought to provide curriculums that are catalytic, allowing learners to develop their knowledge conceptions and their sense of themselves as learners and agents of that learning. The findings indicate that some colleges do that. This finding needs to be shared to enhance practice.

As a teacher educator, embarked on a professional doctorate, it is incumbent upon me to consider how these research findings may have implications for the professional development of teacher educators in the post compulsory sector. Indeed, it is my responsibility to give away the professional knowledge that has been gleaned from this research (Miller, 1969). There may be potential for improving provision and this could come about through collaborative reflective practice. I will consider this in Section 7.9.3. I will begin by reiterating the contribution to professional knowledge that the research findings offer and then I will consider strategies that may be employed to ensure the effective transfer of the professional knowledge. I will finish the section by applying these strategies specifically to the IOE.

7.9.3. The contribution to professional knowledge.

The specific findings from this research were outlined in Section 7.1. The professional knowledge that may be disseminated is the evidence that young people in four separate settings expressed positive value for Illeris's (2007) three dimensions of learning but the content dimension of learning was most consistently endorsed. Further, the principal component analysis demonstrated that through their responses to the questionnaire, young people exhibited value for four distinct components of learning. These were the social dimension of learning, the emotional dimension of learning, meta-learning and the importance of knowledge. These components were then shown to be valued differently between the participants in the sixth form colleges compared with those in the sixth form centres, between the participants pursuing portfolio based programmes compared with those pursuing exam based programmes and between participants with different levels of achievement at GCSE.

These findings have implications for the professional development of teacher educators because they allow teacher educators to reflect upon the emphasis that they give to different aspects of the learning process. Many theorists state that student teachers bring to their training courses implicit knowledge and expectations about classroom procedures (Eraut, 1994; Tomlinson, 1999; Rhine and Bryant, 2007). Katz (2000) suggests that if a trainee's own experience was such that knowledge is 'received', then teaching will be an 'exercise in telling' and learning an 'exercise in remembering' (p. 137). This statement implies that the content dimension of learning is dominant. To counteract this dominance, Rush and Fisher (2009) suggest that the challenge in teacher education is to involve the students in their own learning. Through this, informed dialogue about learning can emerge. I would suggest that teacher educators can draw on the evidence presented in this thesis to further inform teacher trainees about what young people value when they learn in formal situations. This will enable trainees to become more cognisant of the complexity of learning. Fielding et al. (2005) state that 'much of what is important and rich in professional knowledge and practice lies beneath the surface of professional awareness and is very hard to access' (p. 11). For an explicit understanding of learning to be engendered, teacher educators must also invest time to

make their understanding of learning manifest (Eraut, 1994). Nevertheless, there are complex variables involved in the transfer of good practice (Fielding et al., 2005). Pickering et al., (2007) draw on the work of Schön (1983) and Wenger (1998) to consider how effective professional development amongst teachers can be encouraged. They proposed that the learning must include three key themes. These are shared practice, collaboration and scholarly reflection on practice. For this to be beneficial, then it has to be ongoing and within a culture of trust (Fielding et al., 2005; Pickering et al., 2007). Pickering's position is persuasive and adhering to the three themes that he advocates may be purposeful. Therefore, I will complete this section by focussing specifically on my professional position and the Post Compulsory PGCE teacher educators at the IOE and consider how we could all develop our practice in the light of these findings.

Seminars are organised at the IOE to share ideas. I can present the findings from this research at a seminar with teacher educator colleagues. Once this has occurred then my colleagues and I can apply and evaluate the evidence presented. We will do this through mutual and trusting preparation. We can collaborate to explore how we may include the dimensions of learning in our teaching. We can share practice and observe each other to consider the focus we give to the dimensions of learning. We can then return to the seminar setting to scholarly reflect on the implicit and explicit knowledge we share with the trainees about the process of learning. The scholarly reflection will then allow us to revisit our preparation. In this way, the professional knowledge generated by the research here can be utilised to concurrently inform theories of learning and the practical application of such theories. Teacher education practice at the IOE would be enriched.

Nevertheless, the development of teacher educators at the IOE is just one potential consequence of the research. It has been emphasised in this thesis that the experiences of learning that young people have already encountered shape how they approach their current learning. Moreover, the differences found between site contexts in this paper are not removed from the wider situations that the young people find themselves in. This will be considered below.

7.9.4. The social, political and economic context for post-compulsory learners.

The final implication for practice is with regard to the current socio-economic context. The evidence shows that the participants were cognisant of the difficulties that they faced and were aware that to succeed in work they needed to compete. For some, the socio-economic context was anxiety making. It has been argued that young people feel that they are perceived negatively by adults and 'face a huge challenge in dealing with public perceptions' (The Children's Society, 2011, p. 9). I outlined in Chapter 1 how trainee teachers struggle to get learners to learn what they want them to learn and that they are surprised that some learners resist learning. Sometimes I hear my trainees say that contrary to their expectations, the post-compulsory learners "just don't care". Although the discourse that suggests that young people are not invested in their futures might be expedient for teachers, the evidence presented counteracts such notions and eliminates that corrosive position. Amongst other practitioners, my trainees need to heed the evidence presented here that young people are acutely conscious of the demands that will be made of them in their futures. The trainees might recognise that some of the learning behaviours that they see are borne, not from indifference, but from concern and anxiety.

There are implications for practice with regard to the belief from the participants that they need qualifications to succeed. This finding chimes with the proposition by Pring et al. (2009) that in 'what aspires to be a meritocratic society, qualifications play a vital role in selection' (p. 118). However, the Confederation of British Industry (CBI, 2007) suggests that employers emphasise less obvious skills such as problem solving and self management over the knowledge measured in formal qualifications. They argue that young people 'need to have the right attitude towards work' and need to be 'motivated, enthusiastic and willing to learn' (CBI, 2007, p. 13). If, as Pring et al. (2009) suggest, employers use informal contacts to recruit and assess young people, the requirement that young people demonstrate skills beyond the qualification to ensure secure futures should be emphasised. In this light, it might be satisfying for the CBI that the participants in this research acknowledged that they needed to be able to work with others in the future. This is because the CBI states that team working is vital to success

in the work place (CBI, 2007). The caveat though is that the participants consistently valued the importance of knowledge more highly than any other dimension for learning.

Mindful of this, the differences between the sixth form centre and sixth form college settings need revisiting. Tentatively, it can be suggested that whilst all the young people in this study explicitly acknowledged the importance of knowledge for success, different groups were less cognisant of other less tangible factors. Within the sixth form college contexts, young people valued the social dimension of learning more highly than those in the sixth form centres. The explicit appreciation for the social dimension by the college students needs to be disseminated, so that employers and policy makers are aware that if desired, this dimension can be engendered in young people. At the same time, the indifference from those at the sixth form centres for both the social dimension of learning and meta-learning indicates that either this is unnecessary for academic achievement or that a broader vision of learning could be encouraged in those settings, if only so that the young people are better equipped for the skills that the CBI value. Indeed, REFORM (2009) has argued that A Level qualifications have produced a generation of undergraduates who struggle to think for themselves. There may be a mismatch between the messages that some young people in their institutions receive and what they really need to be able to do to succeed in the current socio-economic context. The CBI's (2007) ambition for self-management might still be elusive. It is not that knowledge should not be valued; it is that it is simply not enough.

Even so, there is a reassuring message for colleagues to take from the research with regard to their role in preparing young people for the socio-economic context. It was argued in Section 1.4 that the options available to young post-compulsory learners are limited and dependent on prior achievement. Moreover, participation in education is obligatory de facto (Wolf, 2011). Yet, 77% of the participants in this research reported satisfaction with the choices that they had made and felt motivated towards their programmes. As the participants can see worth in what they are doing presently, this may assist them to anticipate their futures positively.

In summary, perhaps unintentionally, the settings investigated here are preparing their students for the adult world and learning in that adult world in specific ways. The dissemination of the findings can encourage explicit discourse that allows all concerned with the post-compulsory sector to review whether the outcomes for their students with regard to the values expressed for different elements of learning held and evidenced in this research are as they would like them to be.

Moreover, the thesis provides a base with which to make more explicit the processes of learning that young people are adopting. After all, if teacher educators like me are informed further about the active decisions that young people make when they learn, this can permeate our approach to teacher trainees who may be able to incorporate that knowledge as they plan lessons. In 2011, the Office for Standards in Education (OFSTED) felt unable to award any college in England an overall outstanding for the quality of its teaching (OFSTED, 2011). They stated that the 'most important and difficult message for the learning and skills sector is that the quality of teaching needs to rise across the board' and that for too many learners, the outcomes were just satisfactory (p. 8). This despite the crucial role that OFSTED (2011) felt the sector played in enhancing the life chances of young people. As colleges are the largest providers of 16 – 19 education, I feel that OFSTED's (2011) lamentations are warranted. Yet, it was outlined in Chapter 1 that research into post-compulsory learning is sparse. It might be that the application of the evidence presented here could enhance the development of expert teaching.

7.10. Limitations.

Although I defend the authentic position of the thesis and the implications for practice germinating from it, I acknowledge that there are limitations to the research. These are the validity of the research, the constructivist position, the use of a questionnaire and quantitative data and the procedures adopted. I will consider each below.

7.10.1. The validity of the research.

Firstly, the statistical analyses have indicated that there are different components of learning that can be measured. The validity of these components can be questioned. It is possible that although the PCA made latent variables manifest, the manifest variables have been interpreted incorrectly, and that they do not represent what they are intended to represent. This negates construct validity. However, the items in the questionnaire were drawn in part from other implemented surveys (Biggs, 1987; Dweck, 1999), the construction of the questionnaire was devised through a blueprint, and piloted as guided by Rust and Golombok (2009). Therefore, although the construct validity and content validity cannot be proved, it can be defended.

Secondly, in this thesis, the differences between groups of participants with regard to the value they gave each component has promulgated a discussion about how the context for learning, the programmes on to which young people enrol and their previous learning experiences might interact with learner identity. I have not asserted cause and effect. Indeed, there are many other variables that might interweave with the participants values for dimensions of learning. Young people's reports of their compulsory school experiences influence their intentions post sixteen (Gorard, 2010). The participants at the colleges were older than those at the sixth form centres and they were more ethnically diverse. Such variables may be influential in the findings that emerged. Different participants were following different subject areas. These and other unknown variables that young people bring with them to their context have not been explored in this study. Moreover, learning can happen at a sub-conscious level and I have only explored what the participants can make conscious (Marton and Booth, 1997). I could be accused of taking the position I have because it fits in with my prejudices (Robson, 2002).

7.10.2. The constructivist position.

I cannot dispute that the thesis emerges from my experiences. The genesis of the study was my everyday interactions with exasperated teacher trainees. This was compounded with my awareness that there was a paucity of research specific to their learners about learning theory that I could guide them towards and that might help them to improve

their situations. Therefore, the motivation for the research was personal. Having constructed the research from my professional experiences, I accept that its empiricism might be doubted by some. However, as I asserted in Section 2.2, there are many who would argue that all evidence begins with the position of the researcher (Latour and Woolgar, 1986; Law, 2004). Even if the hinterland is mine, the writing of the thesis gives some further meaning to the experiences that I, teacher trainees and others in the sector have (Crotty, 1998; Law, 2004). I agree with Crotty (1998) when he says it is imperative to engage with reality to make it intelligible. The thesis casts light on the values that young people have toward components of learning that hitherto were not known.

On the other hand, to capture the data, I chose to use the method of a questionnaire and to analyse the data I chose to use statistical analyses. Both approaches must be used guardedly firstly to avoid assumptions that items on a questionnaire are measuring what they purport to measure and secondly to avoid the reification of truth through statistical analyses. In Section 7.10.4, I will consider how statistics can lead to reification. Before that I will consider three limitations with regard to the assumptions in questionnaires. These are the issues of fixed design, the design of the questions and the use of rating scales.

7.10.3. The limitations of the method of the questionnaire.

Although I piloted my questionnaire, the design of it was established before the main stage of data collection took place. Robson (2002) states that 'fixed designs are theory driven' (p. 96). This suggests that I as the researcher had a conceptual understanding of what it was that I wished to explore. Asserting that my understanding was a true reflection of reality could be hubris. Chapter 1 of this thesis outlined some of the many dynamics that can influence young people as they choose their post-compulsory pathways. Yet, in the research design, it was my decision to explore Illeris's (2007) three dimensions of learning; I planned the focus of the questions. In this way I may have falsely disentangled the effects of different variables and aimed only to find what I sought (Light et al., 1990).

A second issue with questionnaire design is the researcher's ability to construct questions which produce data that are reliable and lead to valid conclusions. Foddy (1993) suggests that this has not always been the case in twentieth century social science research. He proposes that errors can come from the way the questions are designed as well as the order in which the questions are presented to the participants. The potential limitations within the questionnaires may lead respondents to misinterpret the questions. Moreover, Foddy (1993) emphasises that the relationship between what respondents say and what they actually do is not very strong. Robson (2002) endorses this position suggesting that respondents' answers may be the result of politeness, boredom or a desire to present themselves favourably. Participants 'attitudes and beliefs can be extraordinarily unstable' (Foddy, 1993, p. 4).

A third issue with the questionnaire used in this thesis is the choice of rating scales. Here, it is assumed that there is an equal linear distance between the options that were given to the participants. The questionnaire designed for this research allocated the value of one to represent 'strongly disagree' and the value of four to represent 'strongly agree'. However, there is no guarantee that the measurement of response between agree and strongly agree is the same for each participant or equal to the measurement between agree and disagree (Creswell, 2012). Moreover, using numbers to measure the complex thoughts of young people can be considered a simplification given that the SPSS package is merely drawing conclusions about the numbers themselves (Norman, 2010).

This third limitation of the use of questionnaires is related to the assumption that the use of statistical analyses can remove the fluidity of the truth and reify social research. I will now consider this issue in Section 7.10.4.

7.10.4. The reification of truth through statistical analyses.

In this thesis, I have used statistical analyses to compare the differences between young people with regard to the value that they held for different dimensions of learning. By giving a numerical value to the variables I investigated, I wanted to establish a quantity of expressed value for each of the variables from the participants. This is problematic

because the variables were latent and of primary interest to me as the researcher. Gorard and Taylor (2004) argue that 'no amount of quantification will establish a quantity' (p. 15). Further, even if the values given to the dimensions of learning have been given a numerical value, it is possible that the responses given by the participants to each item might be influenced by other characteristics. The approach I took to analyse the data I gathered is subject to much error (Gorard and Taylor, 2004). I cannot assert that the concepts I explored in the research have become manifest because I used statistics to analyse them.

In addition, in my statistical analyses, to demonstrate the differences between groups of participants, I chose to use the statistical significance of the probability being less than five percent ($p < 0.05$). I emphasised the comparisons that were shown to be statistically significant. By claiming that there were significant differences at $p < 0.05$, I may be making formal assertions about my findings that are unwarranted (Robson, 2002; Gorard and Taylor, 2004). This is because the significance test explores the proposition that there is no difference between the means of the populations that are being investigated (Robson, 2002). Although statistically significant results eliminate the possibility that the results could be because of random variation in the sample, they do not tell the researcher anything about the particular populations being analysed (Robson, 2002). Gorard and Taylor (2004) argue that 'a statistical result is many steps away from a substantive result' (p. 26). Therefore, statistical analyses do not induce or confirm theory. On the contrary, Meehl (1978) suggests that the most that is possible is the refutation of theory.

One final note with regard to the use of statistical analyses is warranted. And that is that computation appears to be objective rather than subjective. It has been suggested that those who read statistical analyses underestimate the importance of the decisions of the researcher (Berger and Berry, 1988). Whereas the qualitative researcher has to justify the meaning that they make throughout their endeavour, the quantitative researcher might assume that the findings that they present are circularly justified through the procedure adopted (Coolican, 1992). The quantitative researcher can simply collect

sufficient pieces of appropriate information and use statistical analyses so that general principles emerge (Shipman, 1985). The presumption that statistics have separateness from the researcher allows the results to have an authenticity that might not be defended.

Therefore, quantitative research 'tends to ignore its own interactions with the social world that it is studying' (Adelman and Young, 1985, p. 47). In this way, whilst I have adopted an approach that seeks rigour through forms of measurement and quantification amenable to statistical analyses, I am vulnerable to accusations that I am imposing categories on to human behaviour and giving it a predictability that is not really there.

I have now shown how statistical analyses can lead to reification and how the construction of a questionnaire may allow for the assumption that the tool is indeed measuring what it purports to measure.

Hodkinson and Macleod (2009) argue that all researchers need to be aware of the orientations towards learning that are implicit in their chosen methodology. I chose to use a rating scale for the gathering of data and undertook quantitative analysis. Such an approach has been considered to have an affinity with learning as acquisition (Hodkinson and Macleod, 2009). Hacker et al. (2009) advise that the measurement of meta-learning poses several challenges. It is a disparate and atomised notion. Additionally, the use of PCA has a 'somewhat tarnished reputation' and has been criticised as a scientific tool because of its ability 'to create apparent order from real chaos' (Tabachnick and Fidell, 2007, p. 609). In spite of the cautionary statements, I have adopted these methods. Yet, as Muijs (2011) advises, the choices and interpretations that I have made have been explicitly outlined throughout the process. The data and the analyses have been used guardedly and the judgements made have been clarified and discussed (Gorard, 2006). The percentages presented have confidently indicated that young people think about their futures and value different aspects of the learning process. The PCA has provided a tool with which to measure the degree to which dimensions of learning are valued, beyond learning as acquisition. It

has demonstrated differences between some groups of participants towards four components of learning.

7.10.5. The procedures adopted.

Finally, the procedures that I employed may limit the worth of the research. It is possible that the collection of the data was not consistent. The times when and the places where the research was undertaken were different and my presence or the presence of other teachers may have altered the response that the participants gave. It was not feasible to control for the possibility that the young people influenced each other as they completed the survey. Neither is it possible to guarantee that the participants were not responding to the items on the questionnaire with what they considered to be socially desirable answers. Moreover, the data was gathered in a two week period. It provides a mere snap shot of how young people, if they were honest, were feeling at that time. It has not been triangulated with qualitative data. Furthermore, completing the questionnaire was of little advantage to the participants. Ethically, this might only be justifiable through the concept of the greater good (Milgram, 1964). Such justification can be easily contested.

Field (2009) states 'the bigger the sample, the more likely it is to reflect the whole population' (p. 35). He defines large samples as greater than 30 (Field, 2009). In this research, the sample from each of these sites was larger than 30 so it can be assumed that normal distribution applies. However, the potential for generalisation is circumscribed by the opportunistic sample. The participants who were involved were accessed because of my professional connections. Access to a different group of colleges could generate very different findings.

7.10.6. Improving the research.

If I have the opportunity, there are several ways in which I could improve the research that I have conducted. I could re-organise the instrument so that it becomes more specific in its capturing of the latent variables. Secondly, I could seek out a greater

number of participants in a greater number of settings. I could investigate how the subject specialist choices interact with the values expressed for different components of learning. I could re-visit participants over time to incorporate a longitudinal aspect to the research and I could support my research with discussion with young people.

7.11. Reflections and concluding comments.

The research is more than verisimilitude; it is 'theoretically driven research of practical value and practically driven research of theoretical value' (Brown, 1997, p. 403). It puts forward some tentative emergent findings that young people have cognisance and regard for the three dimensions of learning. Moreover, young people can recognise the value of meta-learning. Concurrently, separated groups of the sample expressed different value for the different components of learning. Thus the incipient evidence presented here may be of professional use for understanding the position of learners in the post-compulsory sector.

Paradoxically, whilst education is currently pivotal to society's structures and the post-compulsory sector receives constant interest from the media and government, engagement with learning theory lags behind (Bryan, 2004; Coffield, 2007). Although it has been generated in abundance throughout the twentieth century, I would argue, that learning theory is the privileged discourse of those who are fortunate enough to study it. In this thesis, a comprehensive twenty first century learning theory has been applied to a twenty first century context and can be made relevant to post-compulsory teacher educators and teacher trainees. Illeris (2007) reminds us that it is important to maintain that 'learning is a totality' (p. 124). He does not suggest that the three dimensions he promotes are separated. Yet, insight into the value that different young people give to the dimensions can assist understanding about the development of learner identity. The emergence of the explicit domain of meta-learning in the analysis could contribute to a better understanding of the process of learning during the post-compulsory years and it may also assist the professionals who work with such young people.

The post-compulsory sector is a sector that fits between schooling and the wider social and economic world. It is a fulcrum charged with multiple roles. These are years that take children to adulthood, involve identity formation with regard to learning and within which it is accepted that young people need to be equipped for work and rapid change. My teacher trainees care very much about how they are equipping their young people for their futures. Disseminating the evidence presented here might enable more young people towards the expansive epistemic learning identities that Claxton (2007) wishes to promote. It certainly offers me a retrospective tool with which to understand the mismatch between the values for learning held by my quick witted history students and what was required of them in the classroom context.

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Appendices.

Appendix 1. The self reported ethnicities of all the participants at SFB, SFC and SFD.

Self Reported ethnicity at SFB

Described ethnicity.	Frequency	Percentage
White British	31	48
Black British	9	14
British Asian	8	12
Mixed Race	3	5
Indian British	1	1.5
British African	1	1.5
Asian	1	1.5
Brown	1	1.5
British Bangladeshi	1	1.5
White Portuguese	1	1.5
White other	1	1.5
White and black Caribbean	1	1.5
Black other	1	1.5
Caribbean, African and British	1	1.5
Arab	1	1.5
Mixed, white Irish, black Caribbean	1	1.5
Black African	1	1.5
Total	64	98.5
No response	1	1.5
Total	65	100*

*Percentages are rounded to the nearest whole number.

Self Reported ethnicity at SFC

Described ethnicity.	Frequency	Percentage
British Asian	20	19*
Black British	12	12
White British	7	7
Black African	5	5
Turkish	5	5
White Polish	4	4
British Bangladeshi	3	3
Black Caribbean	2	2
British Pakistani	2	2
Turkish Cypriot	2	2
Other	2	2
Pakistani	1	1

Mixed Race	1	1
Asian	1	1
Iranian	1	1
Portuguese European	1	1
White other	1	1
British Indian Asian	1	1
British Turkish Cypriot	1	1
Albanian	1	1
Mixed white and black African	1	1
Mauritian	1	1
Kurdish	1	1
Black African/ Black British	1	1
British Asian - Pakistani	1	1
Mixed	1	1
Black Belgian	1	1
White African – Arab	1	1
African Arab French	1	1
White Lithuanian	1	1
British Mauritian	1	1
British Sri Lankan	1	1
British Asian (Sri Lankan)	1	1
White European	1	1
Chinese	1	1
Latino America /White	1	1
British - Turkish	1	1
Guyanese Asian	1	1
Black British (Caribbean)	1	1
Brown skinned, Nigerian heritage, British origin.	1	1
Black	1	1
Black Caribbean and white British	1	1
Total	95	91*
No response	9	9
Total	104	100

*Percentages are rounded to the nearest whole number.

Self Reported ethnicity at SFD

Described ethnicity.	**Frequency**	**Percentage**
British Asian	12	13*
Black British	12	13
Black African	9	10
White British	5	5
Black Caribbean	4	4
White Polish	3	3
Turkish	3	3

Black	2	2
Chinese	2	2
White	2	2
Asian	1	1
British Bangladeshi	1	1
White other	1	1
Mixed white and black African	1	1
British Pakistani	1	1
White Lithuanian	1	1
Black	1	1
Pakistani English	1	1
Italian	1	1
White Romanian	1	1
English	1	1
Mixed race (black and white)	1	1
Spanish - Mauritian	1	1
White (mix)	1	1
British Asian - Hispanic	1	1
Mixed – African and Caucasian	1	1
Mixed Caribbean and Irish	1	1
British white Asian	1	1
Hispanic Mexican	1	1
Afro - Caribbean	1	1
African	1	1
Black Jamaican	1	1
Polish	1	1
Mixed white and black Caribbean	1	1
White Kurdish	1	1
Arab (Algerian)	1	1
British	1	1
Black British Somalian	1	1
Caucasian	1	1
Black British African	1	1
Total	84	90
No response	9	10
Total	93	100

*Percentages are rounded to the nearest whole number.

Appendix 2. The pilot questionnaire.

Attitudes to Learning Questionnaire

Your name_____ **Your college** _____

Your date of birth _____ **Male** ☐ **Female** ☐ **(Please tick)**

Each statement below is followed by a series of possible responses: strongly disagree, disagree, agree or strongly agree. Read each statement carefully and decide which response best describes how you feel. Then circle the corresponding response. Please respond to every statement. If you are not completely sure which response is more accurate, put the response which you feel is most appropriate. Read each statement carefully and answer as honestly as possible. Do not spend too long on each statement.

Remember: SD = strongly disagree, D = disagree, A = agree, SA = strongly agree

		STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
1	I am motivated to be the best that I can be, just for myself.....	SD	D	A	SA
2	In the future, I will be very motivated to learn only if my job depends on it.....	SD	D	A	SA
3	I think employers value team players who can learn with other people.....	SD	D	A	SA
4	I find learning with others in college a hassle.....	SD	D	A	SA
5	I think that exams at secondary school can be so stressful it is difficult to learn.....	SD	D	A	SA
6	I think learning is an activity best done with others.....	SD	D	A	SA
7	It is so competitive today to get a job, you need to show you are really willing to work.....	SD	D	A	SA
8	When I was fourteen, I thought that if I asked the teacher or my friends questions, it showed I wasn't very smart.....	SD	D	A	SA
9	It doesn't matter how determined I am, there will be things I cannot learn.....	SD	D	A	SA
10	I have a strong drive to do best in all my studies.....	SD	D	A	SA

11	Young people are having such a hard time getting a job at the moment, it makes it difficult to study.....	SD	D	A	SA
12	Even though the times are tough, I think I will be able to get a good job because I am strongly motivated to achieve.....	SD	D	A	SA
13	As I look to the future, I know that I will be constantly changing because of the knowledge and skills I learn.....	SD	D	A	SA
14	The college course/s I am doing now has made me realise how how enjoyable it is to learn with others.....	SD	D	A	SA
15	When I was younger, I learned things by going over and over them until I knew them by heart.....	SD	D	A	SA
16	I look forward to learning with others in the future.....	SD	D	A	SA
17	As I look to the future, I know that I will need to be in the right frame of mind to keep on learning.....	SD	D	A	SA
18	I like to learn on my own.....	SD	D	A	SA
19	I can't wait to leave college so that I no longer have to ask or answer any questions.....	SD	D	A	SA
20	The most satisfying lessons at college are the ones where we learn with other students.....	SD	D	A	SA
21	When I was fourteen, I liked to learn on my own.....	SD	D	A	SA
22	I spend a lot of time finding out about new topics.....	SD	D	A	SA
23	When I was doing my GCSEs at school, I was very motivated to get good grades.....	SD	D	A	SA
24	I like to learn with other people.....	SD	D	A	SA
25	As I look to the future, I know I will avoid learning situations that make me unhappy.....	SD	D	A	SA
26	As I look to the future, I will continue to learn by going over and over things in my head.....	SD	D	A	SA
27	When I was a younger teenager, I had to be motivated by other people to learn	SD	D	A	SA
28	If I try hard enough, then I will learn everything I need to	SD	D	A	SA

29	I don't like it when I am asked questions by teachers in class	SD	D	A	SA
30	I find that learning new information can give me a deep sense of satisfaction	SD	D	A	SA
31	As I look to the future, I am motivated to find happiness through learning	SD	D	A	SA
32	At secondary school, the lessons I enjoyed most were the ones where we were put in groups	SD	D	A	SA
33	I find that the only way to learn many subjects is to memorize them by heart	SD	D	A	SA
34	I think if I ask a teacher or my friends a question it shows that I am not very smart	SD	D	A	SA
35	When I was at secondary school, I found learning to be best when I had someone to talk over the learning with	SD	D	A	SA
36	To do my best when I am learning, I often take small breaks so that I can stay calm	SD	D	A	SA
37	I learned best at secondary school when I was happy	SD	D	A	SA
38	My heart isn't in my course/s at college so I find it hard to learn	SD	D	A	SA
39	When I was fourteen, I thought learning was about absorbing facts	SD	D	A	SA
40	When I am learning at home, I talk over what I am learning with my friends or my parents	SD	D	A	SA
41	I am not a good student, I am always behind with my assignments	SD	D	A	SA
42	What I am learning now is difficult, I must be emotionally strong to manage it	SD	D	A	SA
43	It is so competitive today that to get a good job you need to show you are really willing to work with others	SD	D	A	SA
44	In class, I feel I am part of something meaningful when I am discussing subjects with other people in the class	SD	D	A	SA
45	I find thinking about my future stressful and it has a bad effect on my learning	SD	D	A	SA

46	I always ask questions if I need to understand something	SD	D	A	SA
47	I think that employers value good qualification grades that show them what I know	SD	D	A	SA
48	I am not enjoying what I am learning at college right now	SD	D	A	SA
49	I am motivated to do well, so I try to work solidly all the way through the term	SD	D	A	SA
50	There is so much information to understand that I think learning is something that I will do throughout my life	SD	D	A	SA
51	I can't wait to leave college so that I can just learn on my own	SD	D	A	SA
52	I try to make connections between what I have just learned and what I already know	SD	D	A	SA
53	Even if I have trouble learning the material in lessons, I try to do the work on my own, without help from anyone	SD	D	A	SA
54	I don't contribute very much when we are asked to do group work because I think group work is a waste of time	SD	D	A	SA
55	I am sure that I will not need to learn new information to go forward in life	SD	D	A	SA
56	There are so few jobs for young people like me that it is important that I know as much as I can to impress employers	SD	D	A	SA
57	Soon after a lesson, I think over what we have learned to to make sure I understand it	SD	D	A	SA
58	I like learning new information and new knowledge	SD	D	A	SA
59	Soon after a lesson, I re-read my notes to make sure I understand them	SD	D	A	SA
60	I think when I leave here, I will build on the knowledge I have learned with new knowledge	SD	D	A	SA
61	I like to talk about what I have learned	SD	D	A	SA
62	I test myself on important topics until I understand them completely	SD	D	A	SA
63	I don't really want to be doing the course/s I am doing, and so				

	staying motivated is difficult	SD	D	A	SA
64	I like it when teachers give us time to ask questions about stuff we don't understand	SD	D	A	SA
65	At school, I found it was always important to know as much as possible	SD	D	A	SA
66	I often get frustrated in class and this stops me from concentrating	SD	D	A	SA
67	When I want to learn something, I seek out friends to study with	SD	D	A	SA
68	Even though the times are tough, I think I will be able to get a good job because I show that I am willing to learn with others	SD	D	A	SA
69	I try to relate what I have learned in lessons to something I already know	SD	D	A	SA
70	The college course/s I am on are so so enjoyable, that I am very happy to study for it	SD	D	A	SA
71	To be a good learner in the future, I will talk over new information with friends	SD	D	A	SA
72	I find college learning stressful, I don't want to do anymore than I have to	SD	D	A	SA
73	I find studying the college course/s I am doing now is really interesting	SD	D	A	SA
74	I am not interested in learning information for the sake of it ..	SD	D	A	SA
75	I think I can learn anything I want to if I put my mind to it	SD	D	A	SA
76	I try to apply ideas from lessons to other activities	SD	D	A	SA
77	I memorise key words to remind me of important concepts in the lessons	SD	D	A	SA
78	I know that to learn successfully I need to be in the right mood	SD	D	A	SA
79	I know that being asked questions in class is good for my learning	SD	D	A	SA
80	I tend to learn what's set, I usually don't do anything extra	SD	D	A	SA

81	I don't spend a lot of time learning things that I am not going to be assessed on	SD	D	A	SA
82	If I want to get a good job, or go to university, I am going to need to show that I have lots of knowledge in my head	SD	D	A	SA
83	When I get an assignment back, I go over it carefully correcting all the errors and trying to understand where I made mistakes	SD	D	A	SA
84	I have a good punctuality and attendance record, I am a good student	SD	D	A	SA

There are just some other things I would like to know that would help to have a better picture of how your attitudes to learning.

1. **Please tick the box to indicate which course/s you are studying for now.**

BTEC National Diploma /Level 3 Diploma..... ☐

BTEC First Diploma / Level 2 Diploma..... ☐

BTEC Level 1 Diploma..... ☐

AS Level ..... ☐

A Level ..... ☐

GCSE ..... ☐

Other* _____ ☐ (*please name)

2. **Please write down the name of the subjects you are studying now.**

_____

3. **Tick the GCSE qualifications that you have already been awarded and write the grade next to it.**

		Grade			Grade
English Language	☐	____	Geography	☐	____
English Literature	☐	____	ICT	☐	____
Maths	☐	____	French	☐	____
Science	☐	____	Spanish	☐	____
	☐			☐	

Religious Studies		____	German		____
Business Studies	☐	____	Other * _____	☐	____
Media Studies	☐	____	Other * _____	☐	____
Art	☐	____	Other* _____	☐	____
History	☐	____	Other *_____	☐	____
Design technology	☐	____	Other *_____	☐	____

(*please name)

4. **In your own words, please describe your ethnicity** (e.g. Black British, British Asian, White Polish, White British)_____

And finally.... thank you for doing this questionnaire. If you would be happy to be involved further, please tick here. ☐ ***Thank you so very much for doing this.***

Appendix 3. The final questionnaire for the sixth form colleges.

Attitudes to Learning Questionnaire

Your name _____ **Your college** _____

(optional)

Your date of birth _____ **Male** ☐ **Female** ☐ (Please tick)

Each statement below is followed by a series of possible responses: strongly disagree, disagree, agree or strongly agree. Read each statement carefully and decide which response best describes how you feel. Then circle the corresponding response. Please respond to every statement. If you are not completely sure which response is more accurate, put the response which you feel is most appropriate. Read each statement carefully and answer as honestly as possible. Do not spend too long on each statement.

Remember: SD = strongly disagree, D = disagree, A = agree, SA = strongly agree

		STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
1	I am motivated to be the best that I can be, just for myself.....	SD	D	A	SA
2	The course/s I am doing now has made me realise how enjoyable it is to learn with others	SD	D	A	SA
3	I find college learning stressful, I don't want to do anymore than I have to	SD	D	A	SA
4	I find learning with others in college a hassle	SD	D	A	SA
5	I memorise key words, to remind me of important concepts in the lessons	SD	D	A	SA
6	To be a good learner in the future, I will talk over new information with friends	SD	D	A	SA
7	I tend to learn what is set, I usually don't do anything extra.....	SD	D	A	SA
8	The course/s I am on is so interesting, I am very happy to study for it	SD	D	A	SA

9	I think that GCSE exams at school can be so stressful it is difficult to learn	SD	D	A	SA
10	I have a strong drive to do best in all my studies	SD	D	A	SA
11	Young people are having such a hard time getting a job at the moment, it makes it difficult to study	SD	D	A	SA
12	I try to relate what I have learned in lessons to something I already know	SD	D	A	SA
13	Even though the times are tough, I think I will be able to get a good job because I show that I am willing to learn with others	SD	D	A	SA
14	In the future, I will be very motivated to learn only if my job depends on it	SD	D	A	SA
15	I can't wait to leave college so that I no longer have to ask or answer any questions	SD	D	A	SA
16	When I was in Year 10 and/or 11, I learned things by going over and over them until I knew them by heart	SD	D	A	SA
17	I do not look forward to having to learn with others in the future	SD	D	A	SA
18	When I want to learn something, I seek out friends to study with	SD	D	A	SA
19	I am not interested in learning information for the sake of it ..	SD	D	A	SA
20	Soon after a lesson, I think over what we have learned to make sure I understand it	SD	D	A	SA
21	I try to apply ideas from lessons to other activities	SD	D	A	SA
22	I spend a lot of time finding out about new topics	SD	D	A	SA
23	When I was doing my GCSEs at school, I was very motivated to get good grades	SD	D	A	SA
24	I like to learn with other people	SD	D	A	SA
25	I often get frustrated in class and this stops me from concentrating	SD	D	A	SA
26	I like it when teachers give us time to ask questions about stuff we don't understand	SD	D	A	SA

27	I test myself on important topics until I understand them completely	SD	D	A	SA
28	I don't like to talk about what I have learned	SD	D	A	SA
29	I find that learning can give me a deep sense of personal satisfaction	SD	D	A	SA
30	As I look to the future, I am motivated to find happiness through learning	SD	D	A	SA
31	In Year 10 and/or 11, the lessons I enjoyed the least were the ones where we were put into groups	SD	D	A	SA
32	I think if I ask a teacher or my friends a question it shows that I am not very smart	SD	D	A	SA
33	When I was in Year 10 and/or 11, I found learning to be best when I had someone to talk over the learning with	SD	D	A	SA
34	To do my best when I am learning, I often take small breaks so that I can stay calm	SD	D	A	SA
35	My heart isn't in my course/s at college so I find it hard to learn	SD	D	A	SA
36	When I was doing my GCSEs, I thought learning was about absorbing facts	SD	D	A	SA
37	When I am learning at home, I talk over what I am learning with my friends or my parents	SD	D	A	SA
38	I am not a good student, I am always behind with my assignments	SD	D	A	SA
39	What I am learning now is difficult, I must be emotionally strong to manage it	SD	D	A	SA
40	It is so competitive today that to get a good job you need to show you are really willing to work with others	SD	D	A	SA
41	In class, I feel I am part of something meaningful when I am discussing subjects with other people	SD	D	A	SA
42	I find thinking about my future stressful and it has a bad effect on my learning	SD	D	A	SA

43	I am not enjoying what I am learning at college right now	SD	D	A	SA
44	I always ask questions if I need to understand something	SD	D	A	SA
45	I think that employers value good qualification grades that show them what I know	SD	D	A	SA
46	Even if I have trouble learning the material in lessons, I try to do the work on my own, without help from anyone	SD	D	A	SA
47	I am motivated to do well, so I try to work solidly all the way through the term	SD	D	A	SA
48	There is so much information to understand that I think learning is something that I will do throughout my life	SD	D	A	SA
49	I try to make connections between what I have just learned and what I already know	SD	D	A	SA
50	I am sure that I will not need to learn new information to go forward in life	SD	D	A	SA
51	Soon after a lesson, I re-read my notes to make sure I understand them	SD	D	A	SA
52	I think when I leave here, I will build on the knowledge I have learned with new knowledge	SD	D	A	SA
53	I don't really want to be doing the course/s I am doing, and so staying motivated is difficult	SD	D	A	SA
54	In Year 10 and/or 11, I found it was always important to know as much as possible	SD	D	A	SA
55	I don't think that I need to be in the right mood to learn successfully	SD	D	A	SA
56	I know that being asked questions in class is good for my learning	SD	D	A	SA
57	If I want to get a good job, or go to University, I'm going to need to show that I have lots of knowledge in my head	SD	D	A	SA
58	When I get an assignment back, I go over it carefully correcting all the errors and trying to understand where I made mistakes	SD	D	A	SA

Please go to the next page

Please complete the questions below because they will also provide a better picture of your attitudes to learning.

5. Please tick the box to indicate which course/s you are studying for now.

BTEC National Diploma /Level 3 Diploma..... ☐

BTEC First Diploma / Level 2 Diploma..... ☐

BTEC Level 1 Diploma..... ☐

AS Level ..... ☐

A Level ..... ☐

GCSE ..... ☐

Other* _____ ☐ (*please name)

6. Please write down the name of the subjects you are studying now. _____

_____

7. Tick the GCSE qualifications that you have already been awarded and write the grade next to it.

		Grade			Grade
English Language	☐	____	Geography	☐	____
English Literature	☐	____	ICT	☐	____
Maths	☐	____	French	☐	____
Science	☐	____	Spanish	☐	____
Religious Studies	☐	____	German	☐	____
Business Studies	☐	____	Other * _____	☐	____
Media Studies	☐	____	Other * _____	☐	____
Art	☐	____	Other* _____	☐	____
History	☐	____	Other * _____	☐	____
Design technology	☐	____	Other * _____	☐	____

(*please name)

8. In your own words, please describe your ethnicity (e.g. Black British, British Asian, White Polish, White British)_____

And finally.... thank you for doing this questionnaire. If you would be happy to be involved further, please tick here. ☐ **Tutor group** _____ ***Thank you so very much for doing this.***

Appendix 4. The final questionnaire for the sixth form centres attached to schools.

Attitudes to Learning Questionnaire

Your name _____ **Your School** _____

(optional)

Your date of birth _____ **Male** ☐ **Female** ☐ (Please tick)

Each statement below is followed by a series of possible responses: strongly disagree, disagree, agree or strongly agree. Read each statement carefully and decide which response best describes how you feel. Then circle the corresponding response. Please respond to every statement. If you are not completely sure which response is more accurate, put the response which you feel is most appropriate. Read each statement carefully and answer as honestly as possible. Do not spend too long on each statement.

Remember: SD = strongly disagree, D = disagree, A = agree, SA = strongly agree

		STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
1	I am motivated to be the best that I can be, just for myself.....	SD	D	A	SA
2	The course/s I am doing now has made me realise how enjoyable it is to learn with others	SD	D	A	SA
3	I find Sixth Form learning stressful, I don't want to do any more than I have to	SD	D	A	SA
4	I find learning with others in Sixth Form a hassle	SD	D	A	SA
5	I memorise key words, to remind me of important concepts in the lessons	SD	D	A	SA
6	To be a good learner in the future, I will talk over new information with friends	SD	D	A	SA
7	I tend to learn what is set, I usually don't do anything extra.....	SD	D	A	SA
8	The course/s I am on is so interesting, I am very happy to study for it	SD	D	A	SA

9	I think that GCSE exams at school can be so stressful it is difficult to learn	SD	D	A	SA
10	I have a strong drive to do best in all my studies	SD	D	A	SA
11	Young people are having such a hard time getting a job at the moment, it makes it difficult to study	SD	D	A	SA
12	I try to relate what I have learned in lessons to something I already know	SD	D	A	SA
13	Even though the times are tough, I think I will be able to get a good job because I show that I am willing to learn with others	SD	D	A	SA
14	In the future, I will be very motivated to learn only if my job depends on it	SD	D	A	SA
15	I can't wait to leave college so that I no longer have to ask or answer any questions	SD	D	A	SA
16	When I was in Year 10 and/or 11, I learned things by going over and over them until I knew them by heart	SD	D	A	SA
17	I do not look forward to having to learn with others in the future	SD	D	A	SA
18	When I want to learn something, I seek out friends to study with	SD	D	A	SA
19	I am not interested in learning information for the sake of it ..	SD	D	A	SA
20	Soon after a lesson, I think over what we have learned to make sure I understand it	SD	D	A	SA
21	I try to apply ideas from lessons to other activities	SD	D	A	SA
22	I spend a lot of time finding out about new topics	SD	D	A	SA
23	When I was doing my GCSEs, I was very motivated to get good grades	SD	D	A	SA
24	I like to learn with other people	SD	D	A	SA
25	I often get frustrated in class and this stops me from concentrating	SD	D	A	SA
26	I like it when teachers give us time to ask questions about stuff we don't understand	SD	D	A	SA

27	I test myself on important topics until I understand them completely	SD	D	A	SA
28	I don't like to talk about what I have learned	SD	D	A	SA
29	I find that learning can give me a deep sense of personal satisfaction	SD	D	A	SA
30	As I look to the future, I am motivated to find happiness through learning	SD	D	A	SA
31	In Year 10 and/or 11, the lessons I enjoyed the least were the ones where we were put into groups	SD	D	A	SA
32	I think if I ask a teacher or my friends a question it shows that I am not very smart	SD	D	A	SA
33	When I was in Year 10 and/or 11, I found learning to be best when I had someone to talk over the learning with	SD	D	A	SA
34	To do my best when I am learning, I often take small breaks so that I can stay calm	SD	D	A	SA
35	My heart isn't in my course/s at Sixth Form so I find it hard to learn	SD	D	A	SA
36	When I was doing my GCSEs, I thought learning was about absorbing facts	SD	D	A	SA
37	When I am learning at home, I talk over what I am learning with my friends or my parents	SD	D	A	SA
38	I am not a good student, I am always behind with my assignments	SD	D	A	SA
39	What I am learning now is difficult, I must be emotionally strong to manage it	SD	D	A	SA
40	It is so competitive today that to get a good job you need to show you are really willing to work with others	SD	D	A	SA
41	In class, I feel I am part of something meaningful when I am discussing subjects with other people	SD	D	A	SA
42	I find thinking about my future stressful and it has a bad effect on my learning	SD	D	A	SA

43	I am not enjoying what I am learning at Sixth Form right now .	SD	D	A	SA
44	I always ask questions if I need to understand something	SD	D	A	SA
45	I think that employers value good qualification grades that show them what I know	SD	D	A	SA
46	Even if I have trouble learning the material in lessons, I try to do the work on my own, without help from anyone	SD	D	A	SA
47	I am motivated to do well, so I try to work solidly all the way through the term	SD	D	A	SA
48	There is so much information to understand that I think learning is something that I will do throughout my life	SD	D	A	SA
49	I try to make connections between what I have just learned and what I already know	SD	D	A	SA
50	I am sure that I will not need to learn new information to go forward in life	SD	D	A	SA
51	Soon after a lesson, I re-read my notes to make sure I understand them	SD	D	A	SA
52	I think when I leave here, I will build on the knowledge I have learned with new knowledge	SD	D	A	SA
53	I don't really want to be doing the course/s I am doing, and so staying motivated is difficult	SD	D	A	SA
54	In Year 10 and/or 11, I found it was always important to know as much as possible	SD	D	A	SA
55	I don't think that I need to be in the right mood to learn successfully	SD	D	A	SA
56	I know that being asked questions in class is good for my learning	SD	D	A	SA
57	If I want to get a good job, or go to University, I'm going to need to show that I have lots of knowledge in my head	SD	D	A	SA
58	When I get an assignment back, I go over it carefully correcting all the errors and trying to understand where I made mistakes	SD	D	A	SA

Please go to the next page

Please complete the questions below because they will also provide a better picture of your attitudes to learning.

9. Please tick the box to indicate which course/s you are studying for now.

BTEC National Diploma /Level 3 Diploma..... ☐

BTEC First Diploma / Level 2 Diploma..... ☐

BTEC Level 1 Diploma..... ☐

AS Level ..... ☐

A Level ..... ☐

GCSE ..... ☐

Other* _____ ☐ (*please name)

10. Please write down the name of the subjects you are studying now.

_____

11. Tick the GCSE qualifications that you have already been awarded and write the grade next to it.

		Grade			Grade
English Language	☐	____	Geography	☐	____
English Literature	☐	____	ICT	☐	____
Maths	☐	____	French	☐	____
Science	☐	____	Spanish	☐	____
Religious Studies	☐	____	German	☐	____
Business Studies	☐	____	Other * _____	☐	____
Media Studies	☐	____	Other * _____	☐	____
Art	☐	____	Other* _____	☐	____
History	☐	____	Other * _____	☐	____
Design technology	☐	____	Other * _____	☐	____

(*please name)

12. In your own words, please describe your ethnicity (e.g. Black British, British Asian, White Polish, White British)_____

And finally.... thank you for doing this questionnaire. If you would be happy to be involved further, please tick here. ☐ **Tutor group** _____ ***Thank you so very much for doing this.***

Appendix 5. The letter to the principals at the institutions asking for permission to carry out the research. (The names are withheld to maintain anonymity).

February 21 2011

Dear

Re: research into values towards different dimensions of learning at SFC.

I am a teacher educator based at the Institute of Education, University of London. I am currently the tutor for four of the trainees that you have kindly placed at SFC. Therefore, I regularly visit your sixth form college.

I am writing to ask if it could be possible for me to undertake some unobtrusive but beneficial research with the young people at SFC.

The purpose of the research is to explore the conceptualisations of learning held by young people at SFC. The rationale for the research has three strands. I will outline these briefly here, but I would be very happy to talk this over with you at your convenience.

Firstly, as you would know, there is a dearth of evidence specific to young people who have recently joined post-compulsory education and their ideas about learning. This is detrimental to the sector because whilst learning theories are taught to those who are trained to teach in the sector, they are often learning theories that apply to a younger or older age group. Secondly, this age group are engaged with identity formation (Erikson, 1968) and it can be hypothesised that their conceptions of learning might fuse with this, allowing them to have positive learning identities or otherwise. Thirdly, in educational practice, there is too much reliance on classic notions, some of which are sound but ought to be revisited and expanded. The theoretical framework that is to be utilised in this research is based on the work of Illeris (2007). He suggests that there are three interacting dimensions to learning. These are the cognitive dimension, the emotional dimension and the social dimension. His work offers a broad conceptualisation of

learning that I find to be enabling and relevant to all those currently engaged in the business of learning. I want to explore how broad the conceptualisation of learners in the post-compulsory sector is.

On a personal level, the research is the final section of my Doctorate in Education for which I must write a 45,000 word thesis. As a member of staff at the IOE, I will also want to disseminate the work through the usual academic channels.

The research would be straightforward to administer. I would like 150 (approx) students to complete a questionnaire. The questionnaire would take about 20 minutes to complete. I would like to draw on a range of different young people studying at different levels and on different pathways.

I may follow up the questionnaires with interviews with some young people about their conceptualisations of learning. These interviews would be with pairs of young people and take 30 minutes. I would record the interviews.

It is my intention to administer the questionnaire to young post-compulsory learners in three other sixth form colleges. This would provide depth and meaning to the research.

Of course, once I have done the analysis, I would feedback to you what I have found out about the students conceptualisations of learning. I think that you would find my research to be interesting and purposeful as you continue to transform the life chances of the young people at SFC.

I do hope that you will look favourably on this proposal and feel able to allow me access to some students. I realise that you are very busy, if it is alright with you, I will follow up this letter by contacting your PA in March.

Best wishes

Debbie Mainwaring

Appendix 6. The pilot permission sheet for participants.

Dear Student,

I have been very lucky to be given permission by your college to explore with you your ideas of and attitudes towards learning.

However, it is essential that I also have your permission.

I would be very grateful if you would answer some questions for me. But before you do that, I want you to read this leaflet because it explains why I giving out the questionnaire. It explains the purpose of my research.

In college, a lot of time is spent trying to get students to learn what the college wants them to learn, but sometimes teachers are surprised by what students have learned and what they haven't. There is no certain way for a teacher to be sure that students learn what is expected.

This is normal. Indeed, right now, nobody knows enough about the attitudes to learning of young people who have recently left school and gone to college.

My research aims to help teachers have a better understanding of the attitudes to and ideas of learning that you have. This is important because you have already made some choices about the courses that you take and you have to make a lot more choices about what you are going to do. Some of the courses that you take may alter your views of learning and the learning strategies you use, we just don't know.

But we need to know. Your college needs to know so as to help you move forward in the right way. I need to know because I train teachers to teach you, and if I don't know what you think about learning I can't teach my teacher trainees about that very well.

Therefore, I am asking you to take part in my research about your attitudes towards and ideas of learning. I would like you to complete the questionnaire that I give you. Your answers will be analysed to see if there are similarities or differences between the different groups of students

that I ask. If you are happy to be involved in this research, I would like you to complete the permission slip below.

As a participant in the research, you have the right to remain unknown. This is so that you are protected and no-one can make comments about what you have said. You also have the right to be heard, so if you want to leave your name on the questionnaire and be invited to a further interview, that would be wonderful.

Please ask any questions that you have.

If you give permission to be involved in the research, please sign the form below. Remember, you can change your mind at **any** time.

Thank you so much,

Debbie Mainwaring

I give my permission to be involved in the research about learning.

Name _____

Signed _____

College _____

Date_____

Yes, I am happy to be interviewed at a later date ____ (please tick).

I am in tutor group _____

Appendix 7. The final permission sheet for participants.

Dear Student,

I am doing a large piece of research on how young people think of learning. I am focusing on young people who are in post-compulsory education. This is a crucial time because you have made choices in preparation for your working lives.
Some of the choices that you make may alter your views of learning and the learning strategies you use.

At the moment, there is no research on how you learn and your attitudes to learning. But we need to know. Your Sixth Form College needs to know so as to help you move forward in the right way. People like me need to know because we train teachers to teach you.

Therefore, I am asking you to take part in my research about your attitudes towards and ideas of learning. If you will take part, you can be anonymous. You also have the right to be heard, so if you want to leave your name on the questionnaire and be invited to a further interview, that would be wonderful.

You can contact me at d.mainwaring@ioe.ac.uk

Thank you, Debbie Mainwaring

Appendix 8. Eliminated variables from the correlation matrix.

Item 9, Cell 2	*I think that GCSE exams at school/college can be so stressful it is difficult to learn.*
Item 11, Cell 5	*Young people are having such a hard time getting a job at the moment, it makes it difficult to study.*
Item 14, Cell 17	*In the future, I will be very motivated to learn only if my job depends on it.*
Item 19, Cell 7	*I am not interested in learning information for the sake of it.*
Item 26, Cell 21	*I like it when teachers give us time to ask questions about stuff we don't understand.*
Item 31, Cell 3	*In Year 10 and/or 11, I found learning to be best when I had someone to talk over the learning with.*
Item 34, Cell 20	*To do my best when I am learning, I often take small breaks so that I can stay calm.*
Item 36, Cell 1	*When I was doing my GCSEs, I though learning was about absorbing facts.*
Item 37, Cell 12	*When I am learning at home, I talk over what I am learning with my friends or my parents.*
Item 40, Cell 6	*It is so competitive today that to get a good job you need to show you are really willing to work with others.*
Item 46, Cell 12	*Even if I have trouble learning the material in lessons, I try to do the work on my own, without help from anyone.*
Item 50, Cell 16	*I am sure that I will not need to learn new information to go forward in life.*
Item 55, Cell 20	*I don't think I need to be in the right mood to learn successfully.*

Appendix 9. The thirteen components generated from the PCA with factor loadings greater than 0.4.

	Rotated Factor Loadings.												
Components	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**
Items													
St.43. I am not enjoying what I am learning at college right now. (R). Cell 13	.920												
St.53. I don't really want to be doing the course/s I am doing so staying motivated is difficult. (R). Cell 14	.839												
S.35. My heart isn't in my course at college, so I find it hard to learn. (R). Cell 14	.733												
St.8. The course/s I am on is so interesting, I am very happy to study for it. Cell 14	.630												
St.2. The course/s I am doing now has made me realise how enjoyable it is to learn with others. Cell 15	.622												
St.39. What I am learning now is difficult; I must be emotionally strong to manage it. Cell 8	-.432												
St.3. I find college learning stressful, I don't want to do anymore than I have to. (R). Cell 8	.409												
St.51. Soon after a lesson, I re-read my notes to make sure I understand them. Cell 19		.827											
St.20. Soon after a lesson, I think over what we have learned to make sure I understand it. Cell 10		.780											

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St.4. I find learning with others in college a hassle. (R). Cell 15	.942
St.24. I like to learn with other people. Cell 9	.916
St.17. I do not look forward to having to learn with others in the future. (R). Cell 18	.478
St, 32. I think if I ask a teacher or my friends a question it shows that I am not very smart. Cell 9	.744
St.44. I always ask questions if I need to understand something. Cell 12	.740
St.28. I don't like to talk about what I have learned. (R). Cell 9	.693
S.42. I find thinking about my future stressful and it has a bad effect on my learning. (R). Cell 5	.875
St.25. I often get frustrated in class and this stops me from concentrating. (R). Cell 11	.817
St.45. I think that employers value good qualification grades that show them what I know. Cell 4	.845
St.57. If I want to get a good job or go to University, I'm going to have to show that I have a lot of knowledge in my head. Cell 4	.763
St.33. When I was in Year 10 and/or 11, I found learning to be best when I had someone to talk over the learning with. Cell 3	.781
St.18. When I want to learn something, I seek out friends to study with. Cell 12	.623
St. 54. In Year 10 and /or 11, I found it was always important to know as much as possible. Cell 1	.853

St.23. When I was doing my GCSEs at school, I was very motivated to get good grades. Cell 2										.763			
St.56. I know that being asked questions in class is good for my learning. Cell 21											.862		
St.52. I think when I leave here, I will build on the knowledge I have learned with new knowledge. Cell 16												.758	
St.15. I can't wait to leave college so that I no longer have to ask or answer any questions. (R). Cell 18												.461	
St.16. When I was in Year 10 and/or 11, I learned things by going over and over them until I knew them by heart. Cell 1													.744
Eigenvalues	9.13	2.88	2.20	2.08	1.86	1.56	1.50	1.30	1.20	1.12	1.08	1.03	1.01
% of variance	20.28	6.39	4.88	4.63	4.13	3.46	3.33	2.90	2.66	2.49	2.41	2.29	2.24
Cronback's Alpha (α)	.71	.73	.69	.61	.61	.50	.49	.59	.46	.49	--	.48	--